

APPLICATIONS FOR ADMISSION AND FOR TRANSFER

The Constitution provides that the Board of Direction shall elect or reject all applicants for *Admission* or for *Transfer*, and, in order to determine justly the eligibility of each candidate, the Board must depend largely upon the Membership for information.

This list is issued to members in every grade for the purpose of securing all such available information, and every member is urged to scan carefully each monthly list of candidates and to furnish the Board with data in regard to any applicant which may aid in determining his eligibility. It is the *Duty* of all *Members* to the *Profession* to assist the Board in this manner.

It is especially urged, in communications concerning applicants, that errors in the record be pointed out and a *Definite Recommendation as to the Proper Grading in Each Case* be given, inasmuch as the grading must be based upon the opinions of those who know the applicant personally, as well as upon the nature and extent of his professional experience. If facts exist derogatory to the personal character or to the professional reputation of an applicant, they should be promptly communicated to the Board. *Communications Relating to Applicants are considered by the Board as Strictly Confidential.*

The Board of Direction will not consider the applications herein contained from residents of North America until the expiration of thirty (30) days, and from non-residents of North America until the expiration of ninety (90) days from May 1, 1930.

MINIMUM REQUIREMENTS FOR ADMISSION

Grade	General Requirement	Age	Length of Active Practice	Responsible charge of work
Member	Qualified to design as well as to direct work	32 years	12 years*	5 years
Associate Member	Qualified to direct work	25 years	8 years*	1 year
Junior	Qualified for sub-professional work	18 years†	4 years*	
Affiliate	Qualified by scientific acquirements or practical experience to co-operate with engineers			
Fellow	Contributor to the permanent funds of the Society			

* Graduation from a school of engineering of recognized reputation is equivalent to 4 years active practice.

† Membership ceases at age of 32 unless transferred to higher grade.

LIST OF APPLICANTS.

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The fact that applicants give the names of certain members as references does not necessarily mean that such members endorse.

The number in the center above each record indicates the serial number of the applicant for the current year, and that at the left the district in which he resides.

The abbreviations in *italics* represent, respectively, *TT*, Total Time; *SP*, Sub-Professional Work; *P*, Professional Work; *RC*, Responsible Charge; *D*, Design. The figure for Total Time is determined by adding one-half the time spent in Sub-Professional Work to the time spent in Professional Work. The figures showing the amount of time spent in Responsible Charge and on Design are the estimate of the Applicant. The allowance of four years for graduation or of one-half of a year for each academic year successfully completed in an engineering college without graduation is included in Total Time and Professional Work.

FOR ADMISSION

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(10) ALLEN, JAMES SEQUINE, 1102 Washington Ave., Greenville, Miss. (Age 64. Born in Warren County, Miss.) 1884 Rodman, Louisville, New Orleans & Texas R. R. *TT* 0.5: *SP* 0.5.—1885 to 1886 Rodman and Clerk, Memphis, Birmingham, Alabama R. R. *TT* 0.5: *SP* 0.5.—Oct. 1886 to Oct. 1887 Levelman, L. C. & V. R. R. of Kentucky. *TT* 1: *P* 1.—Oct. 1887 to June 1890 Levelman and Res. Engr., Richmond, Nicholasville, Irvine & Beattyville R. R. *TT* 3: *P* 3: *RC* 2: *D* 1.—June 1890 to Jan. 1902 Asst. Engr., Board of Mississippi Levee Commrs., Greenville, Miss. (1 year) and Inspector, Mississippi River Comm., on work similar to that of Res. Engr. (10½ years). *TT* 11.5: *P* 11.5: *RC* 7: *D* 3.5.—Jan. 1902 to Jan. 1906 City Engr., Greenville, in charge of streets, water-works and sewers. *TT* 4: *P* 4: *RC* 4: *D* 2.—Jan. 1906 to June 1916 Cons. Engr. and Contr. *TT* 10: *P* 10: *RC* 5: *D* 1.—June 1916 to May 1920 Chf. Engr., Highway Comm., Washington County, Miss., constructing concrete road (100 miles). *TT* 4: *P* 4: *RC* 4: *D* 4.—May 1920 to July 1922 Cons. Engr. of Greenville, constructing concrete pavement and sewers. *TT* 2: *P* 2: *RC* 2: *D* 2.—July 1922 to date Chf. Engr., Board of Mississippi Levee Commrs., Greenville, in charge of levees (200 miles) on main river. *TT* 7.8: *P* 7.8: *RC* 7.8: *D* 7.8.—*TT* 44.3: *SP* 1: *P* 43.3: *RC* 31.8: *D* 21.3. Refers to J. F. Coleman, W. E. Elam, J. C. H. Lee, H. N. Pharr, W. J. Shackelford, C. H. West.

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(7) ASH, ARLINGTON DARWIN, 2112 Garland Ave., Detroit, Mich. (Age 26. Born Danville, Pa.) 1930 B. S. in C. E., Univ. of Mich. *TT* 4: *P* 4. Refers to A. J. Decker, H. W. King.

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(9) BARROWS, WALTER IRVING, 63 East McPherson St., Dayton, Ohio. (Age 43. Born Worcester, Mass.) 1909 B. S. in C. E., Worcester Pol. Inst. *TT* 4: *P* 4.—June to Sept. 1909 with W. D. Thompson, Worcester, Mass., as Inspector of Constr. on hydro-electric development on Millers River, Wendell, Mass. *TT* 0.1: *SP* 0.1.—Sept. 1909 to April 1920 with I. W. Jones and (after April 1916) I. W. Jones & Co., Milton, N. H., on general engineering work, principally hydro-electric developments, until July 1910 as Draftsman, then (3 years) Designer of steel and reinforced concrete work, July 1913 to April 1916 Chf. Designer, directing surveys, making preliminary layouts, supervising design and specifying equipment, and after April 1916 Chf. Engr., directing surveys, supervising layouts, designs and purchases, writing specifications and directing construction. *TT* 10.2: *SP* 0.4: *P* 9.8: *RC* 6: *D* 3.8.—April to Sept. 1920 assisted Chas. M. Allen on water-wheel tests. *TT* 0.2: *P* 0.2.—Sept. 1920 to Nov. 1925 Hydr. Engr., and Nov. 1925 to date Power Engr., Management Eng. & Development Co., Dayton, Ohio, on steam power and hydraulic plants, investigating and directing surveys for power sites, making studies of layouts, power available, power requirements, heat balances, etc., supervising design and drawings of various

structures, specifying, approving, supervising installation and starting operation of equipment for power development and power plants, including steam engines, turbo-generators, etc. *TT 9.6: P 9.6: RC 9.6.—TT 24.1: SP 0.5: P 23.6: RC 15.6: D 3.8.* Refers to C. M. Allen, J. P. Badenhhausen, A. W. French, E. A. Taylor, H. S. Taylor, J. F. Vaughan.

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(12) **BERRY, WILLIAM ELMO**, 510 Court House, Tacoma, Wash. (Age 39. Born Central City, Colo.) 1914 to 1917 (4 years) Inspector, Asst. Supt. and Engr. on street layouts, grading, paving, etc., on county roads and real-estate developments. *TT 2: SP 2.—Jan. to Dec. 1918 Senior Engr., City of Tacoma, on municipal improvements. TT 1: P 1.—Jan. 1919 to date with Pierce County, Wash., until Dec. 1922 Deputy Engr., then Asst. County Engr. and at present County Engr. TT 11.3: P 11.3: RC 9.3: D 7.5.—TT 14.3: SP 2: P 12.3: RC 9.3: D 9.3.* Refers to J. A. Arntson, C. D. Forsbeck, O. H. Hallberg, W. A. Kunigk, C. E. Putnam.

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(9) **BeVIER, BRADFORD VIETH**, 1643 Wyandotte Rd., Columbus, Ohio. (Age 34. Born Chicago, Ill.) 1924 B. C. E., Ohio State Univ. *TT 4: P 4.—June 1924 to date Asst. Engr., Ohio State Dept. of Health, on sanitation, investigation, report and review of plans of water supply, sewerage and sewage treatment for public buildings, small municipalities and county sewer districts. TT 5.8: P 5.8: RC 1.5.—TT 9.8: P 9.8: RC 1.5.* Refers to E. G. Bradbury, W. H. Dittoe, C. C. Hommon, A. E. Kimberly, F. H. Waring.

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(13) **BLOTE, MARTIN HENRY**, 817 Forty-Fifth St., Sacramento, Cal. (Age 34. Born San Francisco, Cal.) 1912 graduate, California School of Mechanical Arts, San Francisco, Cal. —Aug. 1912 to April 1914 Chalmers and Rodman, Southern Pacific R. R. *TT 0.8: SP 0.8.—April 1914 to April 1916 Rodman and Levelman, City of San Francisco, Hetch Hetchy project, on railroad location, reservoir, dam and tunnel surveys. TT 1: SP 1.—April 1916 to Sept. 1917 Transmittan on location and reconstruction of Govt. R. R. in Alaska. TT 0.7: SP 0.7.—Oct. 1917 to June 1919 Private, etc., to 1st Sergeant, 25th Engrs., A. E. F. TT 0.9: SP 0.9.—June 1919 to March 1920 with Donaldson & Knight, Tracy, Cal., in charge of party on land and irrigation surveys. TT 0.8: P 0.8: RC 0.8.—July 1922 to July 1923 on office work for Water Resources Investigation, State of California. TT 0.5: P 0.5.—July 1923 to July 1924 Chf. of Party for City of Sacramento, laying out improvements. TT 1: P 1: RC 1.—April 1920 to July 1922 and July 1924 to date with California State Dept. of Public Works, until July 1922 as Chf. of Party on levee and by-pass surveys, flood and low-water measurements and field work for hydraulic investigations, and since July 1924 Asst. Hydr. Engr., Div. of Water Resources, in charge of field and office work under Sacramento-San Joaquin Water Supervisor. TT 7.9: P 7.9: RC 7.9.—TT 13.6: SP 3.9: P 9.7: RC 9.7.* Refers to H. A. Armstrong, E. N. Bryan, J. W. Gross, E. Hyatt, H. M. Stafford.

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(7) **BOLANDER, ERIC BARNARD**, 458 Sexton Bldg., Minneapolis, Minn. (Age 26. Born in Sweden.) 1926 to 1928 (part of time, total 1 year) student in Eng., Univ. of Minnesota. *TT 0.5: P 0.5.—Jan. 1918 to Sept. 1922 and June 1923 to March 1925 with S. J. Peterson, Grading and Excavating Contr., Minneapolis, Minn., until Dec. 1920 as Laborer and Foreman and remainder of time Foreman in Chg. on state highway work, grading, surfacing and excavating. TT 2.6: SP 2.1: P 0.5.—March 1925 to Jan. 1926, April to Dec. of years 1926 and 1927 and March 1928 to date with S. J. Groves & Sons Co., on paving, grading and bridges in Missouri, Illinois and Iowa, and about 5 months in 1925 in charge of part of work on a power dam in Wisconsin, being Foreman (1 year), Gen. Foreman (1¼ years) and (since May 1928) Supt. in Chg. TT 4.5: P 4.5: RC 1.9.—TT 7.6: SP 2.1: P 5.5: RC 1.9.* Refers to P. F. Huntington, H. W. Jones, B. P. Larkin, C. W. Moberg, S. B. Shepard.

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(14) **BOWMAN, DON CEYLON**, Hall St. and Bremen Ave., St. Louis, Mo. (Age 42. Born Fern City, Pa.) 1911 B. S. in Civ. Eng., Pa. State Coll. *TT 4: P 4.—June to Sept. 1911 and March 1915 to Jan. 1920 with Wabash Ry., from June to Sept. 1911 and March to July 1915 as Inspector, M. of W. Dept., Moberly Div., on reinforced concrete shell encasement of bridge piers over Grand River at Darlington, etc., and (after March 1915) acting as Asst. Engr. on encasement of Phoenix cols. approaches of Missouri River Bridge at St. Charles, Mo., also timber bridge work, etc., July 1915 to Jan. 1917 Draftsman, Chf. Engr.'s office, on valuation mapping, bridge design and detail, Jan. 1917 to April 1918 Supervisor, St. Louis Terminals, 6 months acting as Asst. Engr. in charge of construction of Granite City Yard addition, 6-mile track, scale, coal, cinder, water facilities, and after*

April 1918 Div. Engr., St. Louis Div. *TT 3.9: SP 1: P 2.9: RC 2.1.*—Sept. 1911 to Jan. 1915 with Kansas City Terminal R. R. Co., until Nov. 1911 as Chairman, Nov. 1911 to Jan. 1913 Office Estimator and Draftsman on division construction, Jan. 1913 to June 1914 Inspector and (6 months) Dist. Inspector, 2d Div., plain and reinforced concrete viaducts, walls, structural steel, paving and sewer work, and after June 1914 Instrumentman. *TT 1.7: SP 1.7.*—Jan. to Feb. 1915 in shops, American Radiator Co., Kansas City, Mo.—Feb. to March 1915 Supt. of rock quarry for Helping Hand Inst., Kansas City. *TT 0.1: SP 0.1.*—Jan. 1920 to Jan. 1922 Chf. Engr., Industrial Track Constr. Co., St. Louis, Mo., in charge of design of industrial layouts, development of unimproved property for industrial sites, construction of track layouts, bridges, sewers, walls, trestles, loading docks, etc., in St. Louis territory, including design and construction for Ford Motor Co., St. Louis Branch, of temporary trestle, track layout, subway under three tracks, concrete freight elevator shaft with steel superstructure, and timber unloading dock on piling with umbrella roof. *TT 2: P 2: RC 2.*—Jan. 1922 to date in private practice as D. C. Bowman, Engr. and Contr., on similar work (total approx. \$1 250 000), including preliminary studies for development and final plans for new property, providing for grading and track facilities for material and coal yards, designing arrangement and installation of handling equipment; winter 1928 and 1929 as Cons. Engrs., firm made initial investigation, preliminary studies, developed final plan and handled construction of plant for Wet Mix Concrete Co. of St. Louis, consisting of two 2-yd. stationary mixing plants (capacity 300 tons each), steel bin fed by conveyor belts, three cement silos with screw and bucket elevator to feed small cement compartment on overhead bins, surface cement track, double track trestles (400 ft. long), submerged reinforced concrete tunnel (400 ft. long), etc., also constructed track work and trestle deck. *TT 8.3: P 8.3: RC 8.3.*—*TT 20: SP 2.8: P 13.2: RC 12.4.* Refers to M. H. Doyne, E. B. Fay, O. F. Harting, F. C. Huntsman, D. S. McCalman, A. G. Roach, S. M. Smith.

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(7) **BRODINE, ALFRED R.**, 8047 Hamilton Ave., Detroit, Mich. (Age 34. Born Ishpeming, Mich.) Sept. 1919 to July 1921 Asst. Engr. of Tests, Semet-Solvay Co., sampling coals, making coke-oven tests on coke and by-products, flue-gas tests, etc. *TT 1: SP 1.*—July 1921 to Dec. 1923 Engr. with Bartling & Dull, Contrs., Pontiac, Mich., interpreting plans and specifications, estimating, paving and sewer construction. *TT 2.4: P 2.4: RC 0.4.*—Dec. 1923 to date with City Engr.'s office, Detroit, Mich., as follows: Dec. 1923 to Sept. 1924 Rodman, assisting in computing data, publishing report on sanitary survey, investigating sewage, etc.; Sept. 1924 to June 1925 Instrumentman and (1 month) Chf. of Party on surveys for street and alley pavements, street openings; July 1925 to March 1926 Asst. Engr. of Tests, and since March 1926 Engr. of Tests, sampling and testing materials for street and alley construction, supervising testing of materials for construction of sewers, pavements and sidewalks and coring of completed work, special investigations and research work. *TT 5.7: SP 0.7: P 5: RC 4.2.*—*TT 9.1: SP 1.7: P 7.4: RC 4.6.* Refers to W. H. Dorrance, 4th, M. R. Fisher, F. C. Morse, A. H. Place, M. F. Wagnitz, J. H. Wasson, F. E. Weber.

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(9) **BRUCK, LOUIS WILLIAM**, 52 South Audubon Road, Indianapolis, Ind. (Age 43. Born Indianapolis, Ind.) 1909 B. S. in C. E., and 1912 C. E., Purdue Univ. *TT 4: P 4.*—June 1909 to April 1911 structural steel detailing, checking and designing, Noelke-Richards Iron Works, Indianapolis, Ind. *TT 0.9: SP 0.9.*—April 1911 to Dec. 1917 with Vonnegut, Bohn & Mueller, Archts. and Engrs., Indianapolis, on drafting, engineering plans for structural steel and reinforced concrete and mechanical equipment of buildings, last 3 years being responsible for design of structural frame of buildings, all mechanical equipment and specification writing. *TT 5.1: SP 1.5: P 3.6.*—Dec. 1917 to April 1918 Chf. Engr., Bedford Stone & Constr. Co., Indianapolis, in charge of construction, airplane repair depot. *TT 0.3: P 0.3.*—April to July 1918 Draftsman in office of Snider & Rotz, Cons. Engrs., Indianapolis. *TT 0.2: SP 0.2.*—July 1918 to date with Structural Steel Dept., Insley Mfg. Co., Indianapolis, until July 1919 as Chf. Draftsman, then Mgr. in responsible charge of sales, design and erection of structural steel. *TT 11.7: P 11.7: RC 11.7: D 10.7.*—*TT 22.2: SP 2.6: P 19.6: RC 11.7: D 10.7.* Refers to C. Brossman, W. K. Hatt, W. H. Insley, W. A. Knapp, J. G. Mingle, A. C. Rasmussen, A. Smith.

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(1) **BRUSHABER, ROBERT FREDERICK**, 947 East Thirty-Fourth St., Brooklyn, N. Y. (Age 44. Born New York City.) Registered Prof. Engr., New York State.—1905 to 1911 Student in Civ. Eng., Cooper Union (3 years) and Correspondence School (3 years).—Oct. 1903 to May 1904 Asst. Chairman, Title Guarantee & Trust Co., New York City, on surveys. *TT 0.3: SP 0.3.*—May 1904 to date with City of New York, Rapid Transit R. R.,

Public Service, Transit Constr. and Transit Comms. and Board of Transportation, until 1906 as Axeman and Rodman, 1906 to 1918 Asst. Engr., in charge of field party on subway construction, Fulton St., Brooklyn, field and office work, estimates, special field designs and building records (6 years), in charge of surveys for new subway routes (6 miles), field and office work, including drafting, surface and sub-surface structure records (2 years), acting as Sec. Engr. in charge of construction of 1 mile of 4-track subway, 4th Ave., Brooklyn (\$1 870 000) (2 years) and as Office Mgr. (under Asst. Div. Engr.) in charge of three subway contracts in downtown section, special reports and estimates (2 years).—1919 to 1925 Asst. Engr and Engr. Accountant on reports of costs of construction, equipment and financial features of New York City's Rapid Transit R. Rs., and since Oct. 1925 Engr. Accountant, Board of Transportation, preparing contracts and specifications for construction and reconstruction of rapid transit railroads. *TT 22.5: SP 2: P 20.5: RC 12.5: D 4.—TT 22.8: SP 2.3: P 20.5: RC 12.5: D 4.* Refers to J. A. A. Connelly, E. G. Haines, A. H. Jorgensen, G. L. Lucas, F. C. Noble, R. Ridgway, W. F. Stevenson, L. White, F. Wilcock.

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(4) BRYANT, EDWARD KENDALL, 219 East Hanover St., Trenton, N. J. (Age 28. Born Norwood, Mass.) 1925 C. E., Rens. Pol. Inst. *TT 4: P 4.*—Summer 1924 Rodman on subdivision and construction, and Inspector on sewer construction, Feb. to Nov. 1925 Designer on sewers, pavements and subdivision layouts and Inspector on sewer and pavement construction, and Feb. 1926 to May 1928 Designer on pavements, sewers, disposal plants and subdivisions, Inspector and Asst. Res. Engr. on pavement and sewer construction and Chf. of Party on property surveys, construction, topography, etc., all for William S. Lozier, Rochester, N. Y. *TT 2.8: SP 0.1: P 2.7: RC 1.5.*—Nov. 1925 to Feb. 1926 Designer with T. Howard Barnes, New York City, on sewerage system for Santo Domingo, Dominican Republic. *TT 0.3: P 0.3.*—May to Nov. 1928 Chf. Field Engr. with Roy P. Warren, Rochester, N. Y., in charge of field engineering work of Monroe County Park Comm. *TT 0.5: P 0.5: RC 0.5.*—Nov. 1928 to date Asst. Engr. with John L. Weber, Trenton, N. J., on design of dams, etc., being in charge of field work, compiling specifications covering construction of sewers, pavement, water-works and dams. *TT 1.5: P 1.5: RC 0.5: D 0.8.—TT 9.1: SP 0.1: P 9: RC 2.5: D 0.8.* Refers to J. N. Brooks, L. W. Clark, H. T. Critchlow, C. E. Elmendorf, T. R. Lawson, W. S. Lozier.

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(4) BUCHANAN, GEORGE HENRY, 438 Hillcrest Ave., Glenolden, Pa. (Age 41. Born Philadelphia, Pa.) Student (nights), Drexel Inst. (1907–1908 and 1927 to date), and Carnegie Technical Inst., Pittsburgh, Pa. (1912–1914.)—1906 to 1910 Apprentice, Belmont Iron Works, Philadelphia, Pa., tracing and detailing structural steel. *TT 1.7: SP 1.7.*—1910 to 1916 Draftsman with Shoemaker Bridge Co., (1 year) and H. C. Eisenbise (1 year), Philadelphia, McClintic-Marshall Constr. Co., Rankin, Pa. (1 year) and Blaw-Knox (Pa.) Co. (3 years), detailing and checking structural steel. *TT 4.5: SP 1.5: P 3: RC 1.*—1916 to 1920 and 1923 to 1925 Designer, H. C. Frick Coke Co., Scottdale, Pa., designing steel, concrete, timber construction and on field work, and (2 years) designing and checking steel and concrete structures for coal-mining plants. *TT 6: P 6: RC 3: D 6.*—1920 to 1921 Asst. Chf. Draftsman, Memphis Steel Constr. Co., Pittsburgh, in charge of structural steel detail drawing room. *TT 1: P 1: RC 1.*—1921 to 1923 Designer, Jones & Laughlin Steel Co., Pittsburgh, on steel structures for steel mill. *TT 2: P 2: D 2.*—1925 to 1928 Checker with R. H. Beaumont, Philadelphia, checking general designs and layouts for coal and coke plants, boiler-house equipment. *TT 3: P 3.*—1928 to date Designer on building construction, at Philadelphia, 1 year with Irwin & Leighton, designing and estimating and past 1½ years with United Engrs. & Constrs., checking and designing. *TT 2.5: P 2.5: RC 1: D 2.5.—TT 20.7: SP 3.2: P 17.5: RC 6: D 10.5.* Refers to W. E. Belcher, A. E. Duckwall, H. N. Miller, R. N. Priest, T. B. Rights, W. J. Thomas, C. A. Wilmore.

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(7) BUETOW, WALTER CARL, 314 South Bassett St., Madison, Wis. (Age 45. Born Milwaukee, Wis.) 1908 B. S. in C. E., Univ. of Wis. *TT 4: P 4.*—June to Dec. 1908 Asst. Bridge Engr., Wisconsin Geological and Natural History Survey, Madison, Wis. *TT 0.5: P 0.5.*—Dec. 1908 to May 1910 Designer (6 months) and Asst. Engr., Bridge & Bldg. Dept., Chicago, Milwaukee & St. Paul R. R. Co., Chicago, Ill. *TT 1.5: P 1.5.*—May 1910 to July 1911 Designer, Bion J. Arnold Co., Chicago, Irrigation and Water Power, and R. R. and Industrial Shop Depts. *TT 1.2: P 1.2.*—Dec. 1924 to May 1928 Chf. Engr., Stein Constr. Co., Bridge Bldrs., Milwaukee, one year on Oliver Ave. Bridge, Indianapolis, Ind., and (1926–1927) acting as Engr. and Supt. on St. Johns River Bridge (32 spans, reinforced concrete arch, ½ mile long) at Palatka, Fla. *TT 3.4: P 3.4: RC 3.4.*—July 1911 to

Dec. 1924 and May 1928 to date with Wisconsin Highway Comm., Madison, successively as Asst. Bridge Engr., Div. Engr., Engr. of Materials and Day Labor Construction, Bridge Engr., and (since May 1928) State Highway Engr. *TT 15.4: P 15.4: RC 13.6.—TT 26: P 26: RC 17.* Refers to J. Donohue, A. L. Hambrecht, H. F. Janda, H. J. Kuelling, C. F. Loweth, J. R. McLean, F. E. Turneure.

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(2) CLAPP, NATHANIEL, Cobble Mountain Camp, Westfield, Mass. (Age 23. Born Greenfield, Mass.) 1929 B. S., Worcester Pol. Inst. *TT 4: P 4.*—Summers 1924 to 1928 Transitman for F. Deane Avery, Greenfield, Mass., on surveys.—1929 to date Laboratory Asst., Springfield Water-Works, Cobble Mountain Reservoir, on control of soils for Cobble Mountain Dam. *TT 0.3: SP 0.3.—TT 4.3: SP 0.3: P 4.* Refers to C. M. Allen, A. W. French, H. H. Hatch, J. W. Howe, A. J. Knight, C. F. Meyer.

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(1) CLOGSTON, PERLEY WALTER, 565 Academy St., New York City. (Age 30. Born Williamstown, Vt.) 1922 B. S., Dartmouth Coll. 1923 C. E., Thayer School of Civ. Eng. *TT 4: P 4.*—April to Sept. 1922 Rodman on survey, Delaware & Hudson R. R.—April 1923 to Oct. 1925 Asst. Engr., Illinois State Highway Dept., checking profile and cross sections for road work, estimating, map drafting, etc. *TT 1.8: SP 0.8: P 1.*—Oct. 1925 to March 1930 Transitman, Kenn-Well Constr. Co., on survey for Edison power plant, laying out work, setting steel, machinery, large pipe, etc., and (about 3 months) Chf. of Party, also some inspection. *TT 3.2: SP 1.1: P 2.2: RC 0.2.—TT 9: SP 1.9: P 7.2: RC 0.2.* Refers to R. R. Benedict, J. L. Bogart, F. E. Cudworth, P. S. Dow, R. Fletcher, R. R. Marsden, A. P. Richmond, Jr.

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(11) CONROY, GROVER FRANCIS, Washington Apts., Albuquerque, N. Mex. (Age 43. Born Auburn, Cal.) 1905 to 1911 on railroad location and construction, irrigation and city engineering. *TT 2: SP 2.*—Feb. 1911 to Feb. 1912 Res. Engr., Mt. Quarries R. R., in charge of location and construction. *TT 1: P 1: RC 1: D 1.*—Feb. 1912 to Feb. 1913 Chf. of Locating Party, California Highway Comm. *TT 1: P 1: RC 1: D 1.*—Jan. 1914 to May 1918 County Surveyor, Placer County, Cal. and City Engr., Auburn and Lincoln, Cal., general engineering. *TT 4.3: P 4.3: RC 4.3: D 4.3.*—Feb. to June 1919 Field Engr. on Zumwatt Project, Colusa (15 000-acre rice project), in charge of field work. *TT 0.4: P 0.4: RC 0.4: D 0.4.*—June 1919 to Jan. 1920 on several irrigation jobs. *TT 0.6: P 0.6: RC 0.6: D 0.6.*—Jan. 1920 to Feb. 1921 Engr., Post Irrigated Farms, Tucson, in charge of engineering and construction in Div. 1. *TT 1.1: P 1.1: RC 1.1: D 1.1.*—Feb. 1921 to Dec. 1923 with New Mexico Highway Dept., until Oct. 1922 as Locating Engr., then Engr. Inspector and after May 1923 Asst. Dist. Highway Engr. *TT 2.9: P 2.9: RC 2.9: D 2.9.*—Dec. 1923 to Nov. 1924 Supt. of Constr., Southern Surety Co., on contracts. *TT 1: P 1: RC 1: D 1.*—Jan. 1925 to Sept. 1926 Dist. Maintenance Supt., New Mexico Highway Dept., in charge of highway maintenance and construction in seven counties. *TT 1.7: P 1.7: RC 1.7: D 1.7.*—Sept. 1926 to Dec. 1927 Supt. for W. T. McClure on highway construction. *TT 1.2: P 1.2: RC 1.2: D 1.2.*—Jan. 1928 to date Field Representative, Portland Cement Association, on promotion inspection, design of structures, etc., in connection with concrete construction, since Dec. 1929 also saleswork. *TT 2.2: P 2.2.—TT 19.4: SP 2: P 17.4: RC 15.2: D 15.2.* Refers to E. L. Bandy, A. J. Barclay, H. S. Bonte, A. Diefendorf, J. C. Harvey, G. M. Neel, A. O. Peabody, W. H. W. Yeo.

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(15) COOLEY, HENRY BELL, 1403 Canal Bank Bldg., New Orleans, La. (Age 31. Born New Orleans, La.) 1921 B. E., and 1928 LL. B., Tulane Univ. *TT 4: P 4.*—June 1921 to Dec. 1922 with J. W. Billingsley & Co., Cons. Engrs., New Orleans, La., until July 1922 drafting and inspection on highway work and in office, then on design and construction of small sewer system. *TT 1: SP 0.6: P 0.4.*—Dec. 1922 to April 1924 with Cuyamel Fruit Co., Spanish Honduras, until May 1923 as Field Engr. in charge of topographical, drainage and railroad location parties, then Res. Engr. in charge of construction of banana irrigation project. *TT 1.3: P 1.3: RC 1.3.*—Oct. 1924 to May 1928 Asst. City Engr., New Orleans, in charge of installation of sub-surface storm drainage and laying pavement. *TT 3.5: P 3.5: RC 3.5.*—May 1928 to date in private practice of law and engineering, New Orleans, La. *TT 1.9: P 1.9.—TT 11.7: SP 0.6: P 11.1: RC 4.8.* Refers to J. B. Converse, D. Derickson, W. B. Gregory, F. A. Muth, A. F. Theard, J. D. Walker.

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(2) COOMBS, ANTHONY SAVAGE, 100 Arlington St., Boston, Mass. (Age 39. Born Chelsea, Mass.) June 1908 to March 1909 with Pittsburg Eastern Co., Troy, N. Y., and Acme Constr. Co., Herkimer, N. Y., as Timekeeper on New York State Barge Canal. *TT 0.4: SP 0.4.*—

April 1909 to June 1911 Chainman, New York State Highway Dept., principally on inspection of construction. *TT 1.1: SP 1.1.*—July 1911 to March 1915 with Alto Constr. Co., Utica, N. Y., as Timekeeper, Cost Clerk and Field Engr. on New York State Barge Canal and Syracuse (N. Y.) intercepting sewer project. *TT 2.2: SP 1.5: P 0.7.*—Dec. 1918 to Sept. 1921 with Winnissimmet Ship Yard, Inc., Chelsea, Mass., as Draftsman on ship work and Engr. on building construction, design of power house for marine railway. *TT 2.3: SP 0.5: P 1.8: RC 0.6.*—July 1915 to July 1918 and Oct. 1921 to date with Whidden-Beekman Co. and (since July 1922) Whidden-Beekman Eng. Co., Boston, Mass., on office, factory and power-house buildings, until July 1918 as Timekeeper, Draftsman, Estimator and Structural Engr., Oct. 1921 to June 1922 Draftsman and Structural Engr. on construction, and since July 1922 Structural Engr. on estimates, design, specifications and inspection; at present Director of Company. *TT 10.5: SP 1: P 9.5: RC 3.*—*TT 16.5: SP 4.5: P 12: RC 3.6.* Refers to J. V. Beekman, Jr., L. J. Phillips, M. A. Reidy, S. M. Savage, A. C. Waghorne, S. P. Waldron, J. T. Whitney.

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(13) COX, HARRY ALOYSIUS, 2228 Bay St., San Francisco, Cal. (Age 36. Born Missoula, Mont.) 1915 B. S. in Civ. Eng., St. Mary's Coll., Oakland, Cal.—Sept. 1915 to May 1917 with Bradley, Bruff & Labarthe, Min. Engrs., as Draftsman in San Francisco (Cal.) office, and Designer and Checker at construction site of mining and smelting plant for Missouri Cobalt Co., Fredericktown, Mo. *TT 1.3: SP 0.4: P 0.9: D 0.9.*—June to Sept. 1917, Feb. to July 1919, July to Dec. 1925, June to Sept. 1927 and March to May 1929 with Erie L. Cope, Constr. and Cons. Engr., San Francisco, until Sept. 1917 as Asst. Engr. on design of combination and reinforced concrete bridges, and remainder of time Structural Designer of steel-frame and reinforced-concrete buildings including theatres, a garage, a church, industrial and office buildings. *TT 1.8: P 1.8: RC 1.1: D 1.6.*—Oct. 1917 to Feb. 1918 with Henry D. Dewell, Cons. Engr., San Francisco, as Structural Draftsman on steel-frame power house. *TT 0.4: P 0.4.*—Aug. 1919 to March 1920 with M. C. Couchot, Cons. Engr., San Francisco, as Structural Designer on steel-frame office building and reinforced-concrete flour mill and office building. *TT 0.7: P 0.7: D 0.7.*—April 1920 to March 1925 with Empire Refining Co., Bartlesville, Okla., as Asst. Engr. in Refinery Constr. Office and Refinery Engr. at Bartlesville, and Res. Engr. at Ponca City refinery. *TT 5: P 5: RC 1: D 1.*—April to July 1925, March to April 1926, Feb. 1928 to Feb. 1929, June to Sept. 1929 and Oct. 1929 to Jan. 1930 Structural Designer, at San Francisco, successively with L. H. Nishkian, Couchot & Rosenwald, C. H. Snyder, and A. Toriggino, Cons. Engrs., on steel-frame and reinforced concrete theatres, reinforced concrete industrial and office buildings, structural frame and reinforced-concrete hospital, timber additions and repairs to a church, etc. and (1929) Public Works Eng. Corporation, on reinforced concrete design of filtration plant. *TT 2.1: P 2.1: RC 0.9: D 2.1.*—May 1926 to Feb. 1927, Oct. 1927 to Jan. 1928 and Feb. 1930 to date with Thebo, Starr & Anderton, Inc., San Francisco, as Structural Designer of reinforced concrete and structural steel, and preliminary designs and estimates, for hydro-electric developments, and (since Feb. 1930) Designing Engr. *TT 1.2: P 1.2: RC 0.9: D 1.2.*—*TT 12.5: SP 0.4: P 12.1: RC 3.9: D 7.5.* Refers to E. L. Cope, H. D. Dewell, H. Schorer, C. H. Snyder, O. Speir.

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(2) CUSHMAN, ALLERTON RICHARDSON, 89 Broad St., Boston, Mass. (Age 23. Born Clinton, Mass.) 1929 B. S. in Civ. Eng., Worcester Pol. Inst. *TT 4: P 4.*—July to Sept. 1929 Detailer, American Bridge Co., Philadelphia, Pa., on beams, columns, etc., for office buildings. *TT 0.2: P 0.2.*—Summers 1923–1928 and Sept. 1929 to date with New England Power Co. and (after 1928) New England Power Constr. Co., Boston, Mass., as Rodman, Instrumentman, Office Computer, Chf. of Party (Topography), on surveys, construction, etc., field and office, and (since Sept. 1929) Eng. Asst., Hydr. Dept., on computations and estimates. *TT 0.6: P 0.6.*—*TT 4.8: P 4.8.* Refers to C. M. Allen, A. A. Conger, E. A. Dow, A. C. Eaton, A. W. French, A. J. Knight, C. F. Meyer.

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(2) DAVIS, PHILIP KEES, 28 Myrtle Ave., Ansonia, Conn. (Age 31. Born Salt Lake City, Utah.) 1921 B. S., Worcester Pol. Inst. *TT 4: P 4.*—Oct. 1921 to June 1922 Field Engr., Plant Dept., Southern California Telephone Co. *TT 0.3: SP 0.3.*—June 1922 to May 1923 Structural Engr. and Steel Detailer, Baker Iron Works, Los Angeles, Cal., field and office work. *TT 0.5: SP 0.5.*—May to Aug. 1923 Erecting Supt., International Derrick Co., Los Angeles, supervising erection of steel oil-derricks. *TT 0.2: P 0.2: RC 0.2.*—Aug. 1923 to April 1930 Dist. Constr. Supt., The Austin Co. of California, in responsible charge of construction and purchasing for Northern California Dist. At present en route to Russia to take charge for The Austin Co. of Cleveland, Ohio, of construction of automobile plant

and workers' city for Union of Socialistic Soviet Republics. *TT 6.7: P 6.7: RC 6.7: D 1.—TT 1.7: SP 0.8: P 10.9: RC 6.9: D 1.* Refers to W. Dyer, A. W. French, A. J. Knight, R. E. Ward, P. F. Wilkes.

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(11) **De MERSE, FRANCIS FELIX**, 1924 West Palm Lane, Phoenix, Ariz. (Age 34. Born Saranac Lake, N. Y.) Registered Prof. Engr., State of Arizona.—1912 to 1917 (except part of 1916 in U. S. Army) with Saranac Lake (N. Y.) Sewer and Water-Works, on construction, maintenance and operation of water and sewer mains, 4 years as Rodman, Chainman, Transitman and Inspector, and 1¼ years Asst. Supt. *TT 3.3: SP 2: P 1.3: RC 1.3.—1917 to 1918 Inspector with C. A. Weymouth, Philadelphia, Pa., inspecting and reporting on development of gold mine at Table Rock, Cal. TT 0.5: P 0.5: RC 0.5.—1918 (about 9 months) Draftsman, Chester (Pa.) Shipbuilding Co., on structural steel and reinforced concrete design of buildings and ways. TT 0.7: P 0.7: RC 0.7: D 0.7.—1918 to 1919 Detailer, Belmont Iron Works, on buildings and bridges. TT 0.3: P 0.3: D 0.3.—1919 Designer with Sanguinette & Staats, Archts., Ft. Worth, Tex., on reinforced concrete framing plans for buildings (about 3 months), Chf. Draftsman, City Eng. Dept., Ft. Worth, in charge of drafting room and three field parties on paving, walks, sewer, etc. (about 5 months), and Office Engr., City Eng. Dept., Tucson, Ariz., on design of reinforced concrete reservoir and in charge of office (about 3 months). *TT 0.8: P 0.8: RC 0.8: D 0.6.—1920 (about 5 months) Chf. of Party, Greenlee County Highway Dept., Clifton, Ariz., on location and preliminary survey of highway between Clifton and Silver City, N. Mex. TT 0.4: P 0.4: RC 0.4.—1920 to 1923 Office Engr., Pima County Eng. Dept., Tucson, in charge of office and field parties, design of concrete culverts and small bridges. TT 3.2: P 3.2: RC 3.2: D 1.—1923 (about 5 months) Draftsman, Yuma County Highway Comm., Yuma, Ariz., on map of county. TT 0.4: P 0.4.—1923 to 1924 Designer, Southern Pacific R. R. of Mexico, on bridge abutment and station design. TT 0.8: P 0.8: RC 0.8: D 0.8.—1924 to 1925 Hydrographer, Southern Sierras Power Co., determining amount of water company could use for power daily. *TT 1.2: P 1.2: RC 1.2.—1925 to 1927 Chf. Draftsman, Griggs Eng. Co., Phoenix, Ariz., designed Charleston multiple arch dam and in charge of preliminary canal location. TT 1.5: P 1.5: RC 1.5: D 1.5.—1927 to date Designing Engr., Maricopa County Municipal Water Conservation Dist. No. 1, designed outlet works for Lake Pleasant dam, had charge of office, made report on possible power on Agua Fria River, and estimates of cost of new dams, etc.; designed Frye Creek dam for Southern Arizona Edison Power Co. at Safford, Ariz. *TT 2.8: P 2.8: RC 2.8: D 2.5.—TT 15.9: SP 2: P 13.9: RC 12.2: D 7.4.* Refers to W. H. Becker, C. E. Griggs, A. F. Harter, B. F. Jakobsen, W. W. Lane, J. B. Lippincott, T. Maddock, E. V. Miller.***

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(11) **DeWITT, DON ROBERT SMITHWICK**, 855 E. Willow St., Long Beach, Cal. (Age 23. Born Lincoln, Nebr.) Nov. 1923 to date with Harbor Dept. and (since Sept. 1928) Public Service Dept., City of Long Beach, until Aug. 1924 as Chainman, Aug. 1924 to Jan. 1926 Transitman, Jan. to Aug. 1926 Chf. of Party, Aug. 1926 to Jan. 1928 Inspector, Jan. to Sept. 1928 Draftsman, and since Sept. 1928 Inspector, Public Service Dept., responsible for unloading, placing, inspecting and acceptance of all stone for Rainbow Pier enrockment (under construction) (to cost \$725 000), and at present in responsible charge of field surveys, inspection and pay estimates for trestlework, bulkheading, hydraulic fill and enrockment, acting as Chf. Inspector and responsible for work of three assistant surveyors and inspectors. *TT 5: SP 1.4: P 3.6: RC 1.6.* Refers to A. H. Adams, C. M. Cram, C. Johnson, A. J. Newman, H. Paterson, R. D. Van Alstine.

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(13) **DOUGLAS, NORVAL DURHAM**, 648 Thirty-Fourth St., Sacramento, Cal. (Age 33. Born Vicksburg, Miss.) 1920 B. S. C. E., Univ. of Wash. *TT 4: P 4.—July 1917 to March 1918 Rodman, Levelman and Transitman, Southern R. R. TT 0.5: SP 0.2: P 0.3.—April 1918 to Aug. 1919 Private and 2d Lieut., Engrs., U. S. Army, being Line Officer, 318th Engrs. in France (Sept.-Nov. 1918) and R. R. Transportation Officer at St. Aignan, France (Nov. 1918-March 1919). *TT 1.1: SP 0.2: P 0.9: RC 0.9.—May to Nov. 1920 Transitman and Asst. Res. Engr., Alaskan Eng. Comm., Anchorage, Alaska, on railroad construction, in charge (under general supervision) of grading, snowshed, trestle and tunnel construction. TT 0.6: P 0.6: RC 0.4.—Jan. to April 1921 Draftsman and Computer, Colorado Experiment Station, Ft. Collins, Colo., on irrigation and hydraulic experimental work. *TT 0.2: SP 0.2.—May 1921 to Jan. 1922 Transitman, Minnesota Highway Comm., St. Paul, on location. TT 0.7: P 0.7.—March 1922 to March 1923 Jun. Testing Engr., Illinois Highway Dept., Springfield, inspection, testing and research on construction materials. TT 1: P 1.—March 1923 to June 1924 Locating Engr., Missouri Highway Dept., Jefferson City.***

TT 1.3: P 1.3: RC 1.3: D 1.3.—July 1924 to May 1925 with Kentucky Highway Dept., Frankfort, about 9 months as Locating Engr., then Res. Engr., on location and construction (grading and drainage). **TT 0.9: P 0.9: RC 0.9: D 0.7.**—July to Oct. 1925 Field Draftsman, Southern Pacific R. R., on construction. **TT 0.2: P 0.2.**—Oct. 1925 to date with California Div. of Highways, Sacramento, 6 months as Draftsman, over 9 months Locating Engr., and remainder of time Asst. Engr. of Surveys and Plans, having general supervision of location and design. **TT 4.6: P 4.6: RC 4.1: D 4.1.**—**TT 15.1: SP 0.6: P 14.5: RC 7.6: D 6.1.** Refers to F. J. Grumm, J. H. Obermuller, C. S. Pope, C. H. Purcell, T. E. Stanton, Jr.

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(2) **DRISKO, JOHN BUCKNAM**, Massachusetts Inst. of Technology, Cambridge, Mass. (Age 23. Born Winchester, Mass.) 1927 B. S., Mass. Inst. Tech. **TT 4: P 4.**—June 1927 to Sept. 1929 (travelling scholarship) studying and observing in hydraulic laboratories in Europe.—Oct. 1929 to date Asst., Civ. Eng. Dept., Massachusetts Inst. of Technology. **TT 0.5: P 0.5.**—**TT 4.5: P 4.5.** Refers to H. K. Barrows, J. R. Freeman, C. M. Spofford.

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(1) **EBERLIN, RALPH**, 1920 Harrison Ave., New York City. (Age 37. Born New York City.) Licensed Civ. Engr. and Surveyor, States of New York and New Jersey.—1915 B. S. in C. E., and 1918 C. E., Cooper Union.—1910 to 1914 Surveyor and Computer, Survey Dept., Lawyers Title & Trust Co., New York City. **TT 2.5: SP 1.5: P 1.**—1914 to 1917 Jun. Civ. Engr., Tunnel Div., Public Service Comm. (Transit Comm.), New York City, on construction of East River tunnels, in office and field on precise triangulation survey, line and grade in tunnels and inspection of construction. **TT 2.4: SP 0.4: P 2.**—1917 to 1923 Capt., U. S. Army, 7 months with engineer troops on field surveys and construction, Camp Meade, Md., then Officer of Infantry, last two years being Asst. Prof. of Military Science and Tactics, New York Univ., including teaching of military surveying, mapping, engineering, etc. **TT 1.6: P 1.6: RC 1.6.**—1923 to 1924 Valuation Engr., Northeastern Constr. Co., New York City, on valuation of plant and equipment of gas companies, New York and vicinity. **TT 0.6: P 0.6.**—1923 (about 5 months) and 1924 to 1926 Chf. Engr., T. C. Desmond & Co., Inc., New York City, in charge of construction of industrial buildings and of design, planning, surveys, subdivision work and construction of public improvements and utilities on large housing development (several hundred houses), also of office and field engineering construction. **TT 2.9: P 2.9: RC 2.9: D 2.5.**—1926 to date Chf. Engr., City Housing Corporation, New York City, in charge of design, planning, surveys, subdivision, construction of public improvements and utilities and design and construction of residential and industrial buildings on several large scale developments; at present in charge of town planning, subdivision and construction of improvements of Munsey Park, Manhasset, N. Y., Sunnyside, N. Y. and Radburn (Town for Motor Age, about 1 300 acres), Fair Lawn, N. J., collaborated with town planners, designed and built complete sanitary sewer system and storm sewers, sewage-disposal plant, all other improvements, etc., for complete community; also in charge of surveys. **TT 3.6: P 3.6: RC 3.6: D 3.6.**—**TT 13.6: SP 1.9: P 11.7: RC 8.1: D 6.1.** Refers to H. S. DeGroot, T. C. Desmond, C. T. Schwarze, L. C. L. Smith, C. H. Snow.

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(1) **EICHIN, HENRY**, 349 East One Hundred Forty-Ninth St., New York City. (Age 41. Born New York City.) Licensed Surveyor, New York City and New York State—1907 to 1916 Rodman, Transitman and Chf. of Party with John G. Van Horne, Civ. Engr., on street, road, sewer layout and construction, real estate development, etc.—**TT 8: SP 2: P 6: RC 5.**—1917 Draftsman, Computer, Chf. of Party with J. Wallace Higgins, Civ. Engr., New York City. **TT 0.8: SP 0.3: P 0.5: RC 0.5.**—1918 to 1927 with Survey Dept., Title Guarantee & Trust Co., until 1921 Computer, then in charge of Bronx Div. **TT 8: SP 2: P 6: RC 6.**—1928 to date Mgr., Leo J. Ehrhart, Inc., Engrs. and Surveyors, New York City, having complete charge and supervision of making maps, laying out streets and lots, establishing street grades, designing and constructing sewers, retaining walls, etc. (several hundred thousand dollars); also general practice of engineering and surveying in and about New York City. **TT 2: P 2: RC 2.**—**TT 13.8: SP 4.3: P 14.5: RC 13.5.** Refers to C. Cohen, L. J. Ehrhart, J. W. Higgins, C. M. Mapes, J. G. Van Horne.

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(1) **ELA, ARTHUR JOHN**, Ketchikan, Alaska. (Age 46. Born Norwich, Vt.) 1905 B. S., Dartmouth Coll. 1908 C. E., Thayer School of Civ. Eng. **TT 4: P 4.**—May 1905 to Aug. 1907 and May 1908 to April 1910 Aid and Asst., U. S. Coast and Geodetic Survey, on hydrographic surveys and office work in United States, Alaska and Porto Rico. **TT 4.1: SP 0.1: P 4.**—May 1910 to Sept. 1911 survey and construction work on railroad, highway and power development. **TT 1.4: P 1.4.**—Oct. 1911 to Oct. 1914 with U. S. Lighthouse Service,

superintending construction work and inspection in Alaska. *TT 3.1: P 3.1: RC 1.5.*—Oct. 1917 to March 1919 with U. S. Naval Reserve Force, as Lieut., on inspection of navigational instruments at manufacturing plants, and navigating officer of naval transport. *TT 1.5: P 1.5.*—Nov. 1914 to Sept. 1917 Chf. of Party, and April to Dec. 1919 Hydrographic and Geodetic Engr., U. S. Coast and Geodetic Survey, coast pilot revision, hydrographic surveys and office work. *TT 3.7: P 3.7: RC 2.*—Jan. 1920 to April 1926 Civ. Engr., Citizens Light, Power & Water Co., Ketchikan, Alaska, on hydro-electric construction and maintenance, tunnelling, concrete construction, etc. *TT 6.3: P 6.3: RC 1.5: D 1.5.*—May 1926 to date in private practice as Civ. and Hydr. Engr., Ketchikan, Alaska, surveys and field investigations for extensive power developments. *TT 4: P 4: RC 3.—TT 28.1: SP 0.1: P 28: RC 8: D 1.5.* Refers to H. L. Bowlby, F. H. Hardy, C. W. Harris, A. Hazen, W. E. Parker, R. S. Patton, H. W. Rhodes, J. B. Warrack.

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(11) **ELMENDORF, HAROLD BENJAMIN**, Mesilla Park, N. Mex. (Age 36. Born Chicago, Ill.) 1923 B. S. in Agri., N. Mex. Coll. of Agri. & Mech. Arts. *TT 4: P 4.*—Sept. 1911 to June 1912 student, Texas Agricultural & Mechanical Coll.—March to Aug. 1913 Instrumentman with City Engr., Port Arthur, Tex., on street paving, storm-sewer and street-railway location. *TT 0.3: SP 0.3.*—June 1914 to May 1916 Rodman, Instrumentman and Draftsman, The Texas Co., Port Arthur, on drainage, surveying, structural detailing and construction. *TT 1: SP 1.*—1916 to 1919 with Infantry, U. S. Army, finally as Capt.—Aug. to Dec. 1919 Supt. of Constr. with Constructing Quartermaster, U. S. Army, at Camp San Benito, Tex., on design and construction, camp water and sewer system, etc. *TT 0.3: P 0.3: RC 0.3.*—Jan. 1920 to June 1923 student.—April 1924 to Aug. 1926 Asst. to County Surveyor and Town Engr., in field and office on surveying and subdivision, general town engineering, pavement design and construction and irrigation design. *TT 2.2: SP 0.2: P 2: RC 1: D 0.3.*—Aug. to Dec. 1926 Res. Engr. with H. G. Olmsted, Cons. Engr., Las Cruces, N. Mex., in charge of construction of water (\$80 000) and sewer (\$30 000) lines and sewage-disposal plant (reinforced concrete, \$20 000). *TT 0.3: P 0.3: RC 0.3.*—Dec. 1926 to Jan. 1927 Asst. to Herbert W. Yeo, State Engr., Santa Fe, N. Mex. *TT 0.1: P 0.1.*—Jan. 1927 to date County Surveyor and Town Engr., Las Cruces, N. Mex., on surveying and subdivision, irrigation design, general town and county engineering, drainage, sidewalk and pavement, water and sewage, design and construction, roads and bridges. *TT 3.3: P 3.3: RC 3.3: D 1.—TT 11.5: SP 1.5: P 10: RC 4.9: D 1.3.* Refers to W. T. Collings, Jr., C. C. Crew, P. S. Fox, A. O. Peabody, W. H. W. Yeo.

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(12) **FAWKES, ARTHUR WALTER ELLSON**, City Hall, Moose Jaw, Sask., Canada. (Age 51. Born Kingston-on-Thames, England.) Registered Prof. Engr., Provinces of British Columbia and Ontario. 1900 C. E., Coll. of Sci. and Tech., Edinburgh, Scotland.—1908 and 1909 Res. Engr., Town of Campbellford (1 year) and City of Peterborough (1 year), Ont., Canada, on concrete dam and power developments, also pumping station for latter. *TT 2: P 2: RC 2.*—1911 to 1912 Engr. of Constr., City of Minneapolis, Minn., on mechanical water-filtration plant. *TT 2: P 2: RC 2.*—1913 to 1914 Water-Works Engr., City of Calgary, Alberta, Canada; designed future water supply from Rocky Mts. and designed and constructed concrete tunnel under Bow River, etc. *TT 2: P 2: RC 2: D 2.*—1915 to 1919 Cons. Engr., Calgary, power developments for municipalities, etc. *TT 5: P 5: RC 5: D 5.*—1920 to 1921 Engr., Municipality of Summerland, B. C., on design and construction of irrigation works, water-works and bridges. *TT 2: P 2: RC 2: D 2.*—1921 to 1923 Advisory and Constr. Engr., Board of Education, Hamilton, Ont., during construction of Technical and Art (\$1 500 000), Collegiate (\$500 000) and Public (\$500 000) Schools; 1922 to 1923 (evenings) also Teacher of Eng. and Surveying, Hamilton Tech. and Art School. *TT 2: P 2: RC 2: D 2.*—1924 to 1928 City Mgr. and City Engr., Brandon, Man., Canada. *TT 5: P 5: RC 5: D 5.*—1929 to date Engr. Commr., City of Moose Jaw, Sask., Canada. *TT 1.2: P 1.2: RC 1.2: D 1.2.—TT 21.2: P 21.2: RC 21.2: D 17.2.* Refers to W. I. Bishop, E. E. Brydone-Jack, W. N. Jones, J. R. C. Macredie, E. G. Matheson, C. A. P. Turner.

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(15) **FIELD, HUGH TOWNSEND**, 2120 Fourteenth St., Lubbock, Tex. (Age 33. Born Calvert, Tex.) June 1915 to June 1920 student, Eng. Dept., Univ. of Texas. *TT 2: P 2.*—Instructor, Aeronautics; Ensign, U. S. Naval Aviation; vacations Rodman, Chairman and Draftsman.—June 1920 to May 1922 Engr., Production Dept., Texas Co. of Mexico, in charge of construction of pipe lines, pump stations, tanks, camps, etc., and of surveys, Tepetate, Chinampa and Tocamtille, Mexico. *TT 1.9: P 1.9: RC 1.2: D 1.2.*—June to Sept. 1922 Inspector on concrete paving, Washington County, Tex. *TT 0.1: SP 0.1.*—Sept. 1922

to Jan. 1925 Asst. County Engr., Jefferson County, Tex., supervising concrete and sheet and rock asphalt paving, concrete structures, being Resident, Port Arthur Dist., then Prin. Asst. *TT 2.4: P 2.4: RC 2.1: D 1.*—Jan. to Dec. 1925 Div. Engr., State Highway Dept. of Texas, Corpus Christi. *TT 1: P 1: RC 1: D 1.*—Dec. 1925 to Sept. 1929 Mgr., Barber Lumber & Mfg. Co., Beaumont, Tex., in charge of finance, design and construction of residences and buildings. *TT 3.7: P 3.7: RC 3.7: D 3.7.*—Sept. 1929 to date member of firm, Field & McCelvey, Contrs., Lubbock, Tex., on highway construction. *TT 0.7: P 0.7: RC 0.7.*—*TT 11.8: SP 0.1: P 11.7: RC 8.7: D 6.9.* Refers to L. Acker, E. C. H. Bantel, A. G. Classen, G. H. Gilchrist, T. C. Mitchell, Jr., R. D. Parker, W. O. Washington, R. G. Williams.

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(15) **FRENCH, FRANK STURGILL**, City Hall, Amarillo, Tex. (Age 29. Born Ceredo, W. Va.) Student ($\frac{1}{2}$ year) Marshall Coll. and (2 years) Ohio State Univ. *TT 1: P 1.*—1920 to 1921 Rodman, Levelman and Draftsman, Summers County, Hinton, W. Va. *TT 0.3: SP 0.3.*—1922 Draftsman, State Highway Comm., Fayetteville, W. Va. (3 months), and with Cowle-French Constr. Co., on 7 miles of road construction (3 months). *TT 0.3: P 0.3.*—1923 (6 months) Draftsman, American Rolling Mills Co., Ashland, Ky. *TT 0.3: SP 0.3.*—1923 to 1924 Office Engr., Consolidation Coal Co., Van Lear, Ky., on surveys, tippie design and general mining engineering. *TT 1.5: P 1.5.*—1925 to 1926 Engr. and Estimator, Pacific Coast Steel Co., Seattle, Wash., on reinforced concrete. *TT 2.2: P 2.2.*—1927 (3 months) Field Engr., Castle Cliffs Development Co., Amarillo, Tex., in charge of subdivision drainage layout. *TT 0.3: P 0.3: RC 0.3: D 0.3.*—1927 to date with City of Amarillo, $2\frac{1}{2}$ years as Designing Engr. on sanitary sewers (\$250 000) and Asst. City Engr. on structural engineering for Bldg. Dept. insurance engineering, and remainder of time Asst. City Engr., Bldg. Engr., Fire Marshall and Designing Engr. on viaducts (\$200 000). *TT 3.1: P 3.1: RC 3.1: D 3.1.*—*TT 8.8: SP 0.8: P 8: RC 3.4: D 3.4.* Refers to H. R. Anderson, C. L. A. Bockemohle, D. H. Jones, H. A. Levering, M. C. Nichols.

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(3) **FRIEDMAN, THEODORE WILLIAM**, 62 Jane St., Hornell, N. Y. (Age 21. Born Chicago, Ill.) 1929 B. S. in C. E., Armour Inst. Tech. *TT 4: P 4.*—June to Sept. 1929 Rodman, Sept. to Dec. 1929 Transltman, and Dec. 1929 to date Material Checker, M. of W. Dept., Erie Railroad Co., Hornell, N. Y. *TT 0.4: SP 0.4.*—*TT 4.4: SP 0.4: P 4.* Refers to J. R. Griffith, R. L. Stevens.

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(11) **FULLER, PURL**, 3824 Third Ave., Los Angeles, Cal. (Age 36. Born Clyde, Kans.) Jan. 1914 to July 1922 with County Engr., Grundy County, Iowa, until June 1915 as Draftsman, designing reinforced concrete bridges and culverts, platting maps and profiles, June 1915 to Jan. 1917 Rodman, Chairman and Instrumentman on surveys, Jan. 1917 to Jan. 1918 Civ. Engr., designing county road projects, also balancing cuts and fills, establishing grades, bridge and culvert location, tile drainage, etc., and after Jan. 1918 Asst. County Engr. in charge of designing county road projects and field supervision for construction of roads and bridges. *TT 7: SP 1.5: P 5.5: RC 4.5: D 0.8.*—July 1922 to May 1923 in private practice, concrete culvert and bridge construction and county road work. *TT 0.9: P 0.9: RC 0.9.*—May 1923 to date with City of Los Angeles, Cal., as follows: May 1923 to Feb. 1924 Draftsman, platting profiles, checking construction, preparing small scale plan and elevation for viaduct plans, etc.; Feb. 1924 to May 1925 Jun. Civ. Engr., San Fernando Valley Dist., designing street improvements, being responsible for grade, alignment, drainage, design and accuracy; May 1925 to Jan. 1927 Asst. Dist. Engr. in charge of establishing street grades, making field investigations for major street improvements and investigations and reports on subdivisions, approving street plans and supervising design of street improvements, in charge of all office employees, etc.; Jan. 1927 to Dec. 1928 Asst. Civ. Engr., Venice Dist., designing and supervising design of special major street improvements, in charge of establishing street grades; since Dec. 1928 Asst. Civ. Engr. in charge of street improvements, including co-ordination of storm drain and sanitary sewer plans. *TT 6.6: SP 0.4: P 6.2: RC 6.2: D 6.2.*—*TT 14.5: SP 1.9: P 12.6: RC 11.6: D 11.* Refers to P. H. Albright, L. Aldrich, E. H. Clarkson, Jr., P. L. Hazard, H. C. Ives, T. A. Jordan, W. D. Potter.

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(13) **GALLAGHER, GEORGE AUGUSTUS**, 1012 The Alameda, Berkeley, Cal. (Age 42. Born San Francisco, Cal.) 1913 B. S., Univ. of Cal. *TT 4: P 4.*—May 1913 to date with Pacific Tank & Pipe Co., 3 years as Estimator and Salesman, 5 years Salesman and Supt. of Constr. and $8\frac{1}{2}$ years Engr. and Salesman; work includes supervising installation of wood-stave pipe and tanks, assisting on and drawing up specifications and designing banding, cradles, support structures, etc. for pipe; directs foremen on smaller jobs and takes charge in field on larger work; 1920–1921 had charge of installing 15-mile pipe line (\$400 000)

and at present has charge of installing 72-in. (4 800 ft.), 48-in. (7 000 ft.), and 36-in. (2 200 ft.), pipe lines for bringing water from Elwha River to City of Port Angeles, Wash. TT 15.5: SP 1.5: P 14: RC 13.5: D 8.5.—TT 19.5: SP 1.5: P 18: RC 13.5: D 8.5. Refers to W. Dreyer, H. B. Hammill, E. N. Murphy, I. C. Steeld, H. C. Vensano.

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(11) GEBO, ROBERT ROY, 460 West Works St., Sheridan, Wyo. (Age 23. Born Cody, Wyo.) 1930 B. S. in C. E., Univ. of Wash. TT 4: P 4.—Summer 1928 Rodman, Chicago, Milwaukee, St. Paul & Pacific R. R.—Summer 1924 Chainman, June 1926 to Oct. 1927 Draftsman, and June 1929 to Jan. 1930 Transitman and Draftsman, Pacific Gas & Elec. Co. TT 4: P 4. Refers to I. L. Collier, G. C. Green, R. A. Monroe, C. C. More, R. G. Tyler.

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(1) GERACI, ALFRED, 2 Sickles St., New York City. (Age 36. Born New Haven, Conn.) 1914 to 1917 Student, C. E. course, Sheffield Scientific School. TT 1.5: P 1.5.—Sept. 1918 to June 1919 with The Connecticut Co., New Haven, Conn., on drafting and field work. TT 0.4: SP 0.4.—June to Aug. 1919 with E. W. Wiggins, New Haven, on bridge inspection at Springfield, Mass. TT 2.3: P 2.3: RC 0.8.—Aug. 1919 to Jan. 1922 with Connecticut Highway Comm., New Milford, Conn., 1 month as Rodman, 6 months Instrumentman and remainder of time Chf. of Party, on preliminary surveys, cross-section, stakeout and grading for proposed roads. TT 2.3: P 2.3: RC 0.8.—Jan. 1922 to March 1923 with J. Frederick Jackson, New Haven, in charge in field on subdivision work, water-works and buildings, made computations and did mapping. TT 1.2: P 1.2: RC 1: D 0.2.—March 1923 to Jan. 1925 Engr., Inland Dredging Corporation, Brooklyn, N. Y., in charge of field work and estimating at Lido Beach, Belmore Shores, American Venice and other developments in Long Island. TT 1.8: P 1.8: RC 1: D 0.8.—June 1925 to date Engr., Riverdale Water-Works Corporation, Bronx, N. Y., in charge of field work on laying of new water mains in New York City and New York State; does all estimating, supervises laying and orders and checks all materials. TT 5.2: P 5.2: RC 3.5: D 1.7.—TT 12.7: SP 0.4: P 12.3: RC 6.3: D 2.7. Refers to J. H. F. Clark, C. R. Harte, J. F. Jackson, W. L. Kuehnle, E. W. Wiggins.

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(6) GIDLEY, LOUIS PAUL, Box 138, Morgantown, W. Va. (Age 24. Born Morgantown, W. Va.) 1929 B. S. C. E., W. Va. Univ. TT 4: P 4.—Summer 1927 Draftsman, West Virginia State Road Comm., plotting cross-sections, figuring grade, etc.—Summer 1928 Gen. Inspector on sewer construction, L. V. Carpenter, Engr. in Chg.—June 1929 to date Inspector with U. S. Govt., on Mississippi River, acting as Concrete Inspector and Surveyor. TT 0.4: SP 0.4.—TT 4.4: SP 0.4: P 4. Refers to G. P. Boomaliter, L. V. Carpenter, R. P. Davis.

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(11) GIRAND, JAMES, 405 Ellis Bldg., Phoenix, Ariz. (Age 27. Born Prescott, Ariz.) 1923 B. Sc., and 1928 C. E., Va. Mil. Inst. TT 4: P 4.—Aug. 1923 to May 1924 Transitman, U. S. Bureau of Public Roads, on highway construction and location in Arizona and New Mexico. TT 0.4: SP 0.4.—Sept. 1924 to July 1925 Transitman, U. S. Indian Irrigation Service, on construction of diversion dam and bridge at Sacaton, Ariz. TT 0.5: P 0.5.—Aug. 1925 to Feb. 1926 Materialman and Timekeeper, Atkinson-Spicer Co., Los Angeles, Cal., on construction of Sacatella storm drain. TT 0.3: SP 0.3.—March to Aug. 1926 Engr., The Foundation Co., on construction of sawmill and dry kilns at McNary, Ariz. TT 0.5: P 0.5: RC 0.5: D 0.5.—Sept. to Dec. 1926 in private practice, mining surveys and irrigation investigations in Arizona. TT 0.3: P 0.3.—Jan. to Oct. 1927 Res. Engr., Maricopa County (Ariz.) Water Conservation Dist. No. 1, on construction of Lake Pleasant multiple arch dam. TT 0.8: P 0.8: RC 0.8.—Nov. 1928 to July 1929 Engr. for James B. Girand, on construction of Frye Creek Arch Dam, Ariz. TT 0.7: P 0.7: RC 0.7: D 0.4.—Nov. 1927 to Oct. 1928 and Aug. 1929 to date Engr., Arizona Hydro-Electric Syndicate, on field surveys, water-supply studies for power project on upper Salt River, Ariz., design of hydro-electric power plants, financial reports, etc. TT 1.7: P 1.7: RC 1.7: D 0.7.—TT 9.2: SP 1.2: P 8: RC 3.7: D 1.6. Refers to J. A. Anderson, A. F. Harter, W. C. Lefebvre, G. L. McLane, C. R. Olberg, H. G. Roby.

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(1) GOPALAKRISHNA, SESHIER, Mysore Iron Works, Bhadravati, Mysore State, India. (Age 42. Born Dharapuram, Coimbatore Dist., South India.) 1907 received certificates as Overseer and Draftsman, Eng. School, Mysore Govt. Studied Architectural Eng., International Correspondence School, London.—Dec. 1913 to July 1918 Divisional Draftsman, Public Works Dept., Nagpur, Div. No. 2, Central Provinces Govt., in charge of Divisional Drawing Office. TT 2.6: P 2.6.—Nov. 1916 to Sept. 1918 Drainage Scheme Draftsman.

Mysore Public Works Dept., Bangalore; designed Bangalore City public market and drainage, scheme equipments, layout of town, extensions, etc. *TT 1.7: P 1.7.*—Sept. 1918 to July 1919 Chf. Draftsman for Govt. on Mysore Wood Distillation and Iron Works Scheme, on preliminary investigations, designed temporary staff quarters and permanent residential buildings for officers, on location of sites, etc., at Bhadravati. *TT 0.9: P 0.9: D 0.9.*—July 1919 to date Chf. Draftsman, in charge of all design for Mysore Iron Works, Bhadravati (state owned), comprising saw-mill, wood-carbonizing, blast-furnace and ore-crushing plants, machine and pattern shops, foundry, pipe foundry, power, boiler and pump houses and chemical plant; designed layout of Bhadravati, also drainage scheme, roads, culverts, bungalows for officers, staff quarters, and working details for plant construction offices, stores, etc. (cost of plant, including 60 miles of tramways, about \$1 000 000); designed tar-distillation plant, and details of cellar arrangement, foundations and structural for centrifugal system pipe-manufacturing plant. *TT 10.3: P 10.3: RC 10.3: D 10.3.*—*TT 15.5: P 15.5: RC 10.3: D 11.2.* Refers to H. G. Howard, G. B. E. Truscott. (Applies in accordance with Sec. 1, Art. I, of the By-Laws.)

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(7) **GOTAAS, HAROLD BENNETT**, 215 Lynn Ave., Ames, Iowa. (Age 23. Born Mellette, S. Dak.) 1928 B. S. in C. E., Univ. of S. Dak. *TT 4: P 4.*—March to June 1928 (while student) Inspector on construction of an armory and gymnasium at Vermillion, S. Dak.—Sept. 1928 to date Graduate Student and Graduate Asst., Civ. Eng. Dept., Univ. of South Dakota; summer 1929 on design and estimating for Iowa Highway Comm. *TT 0.3: P 0.3.*—*TT 4.3: P 4.3.* Refers to T. R. Agg, J. M. Brown, R. A. Caughey, A. H. Fuller, F. Kerekes, A. Marston.

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(13) **HANDS, STANLEY MOORE**, 3141 O St., Sacramento, Cal. (Age 41. Born Aurora, Ill.) 1916 B. S. in C. E., and 1926 C. E., Univ. of Iowa. *TT 4: P 4.*—1907 Chainman and Rodman, Chicago, Milwaukee & Puget Sound Ry. *TT 0.3: SP 0.3.*—1910 Leveler, Iowa City & Ottumwa Elec. Ry., Iowa City, Iowa. *TT 0.2: SP 0.2.*—1911 to 1913 Res. Engr., General Petroleum Co., on construction of pipe line over Coast Range from Leibre to Newhall, Cal. *TT 1.2: SP 0.2: P 1: RC 1.*—1917 (about 7 months) and 1919 City Engr., Iowa City, Iowa. *TT 1.6: P 1.6: RC 1.6: D 1.6.*—1920 to 1928 Gen. Mgr., River Products Co., Crushed Stone Producers, Venders and Contrs., Iowa City, in charge of design and construction of plant and operations in producing crushed limestone for road and building purposes, also in charge of sales and promotion; designed and constructed crushing plant and 2 miles of railway, with bridges, culverts and switches, made tests, etc. *TT 9: P 9: RC 9: D 9.*—1929 Contrs. Engr., Atkinson Constr. Co., on construction of Pardee dam, Valley Springs, Cal. *TT 0.4: P 0.4: D 0.4.*—1929 to date Jun. Testing Engr., Div. of Highways, California, at Sacramento, Cal. *TT 0.8: P 0.8.*—*TT 17.6: SP 0.8: P 16.8: RC 11.6: D 11.* Refers to R. W. Crum, A. P. Denton, B. J. Lambert, T. E. Stanton, Jr., H. W. Tabor, J. D. Wardle.

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(14) **HARDY, ABBY WOLVERTON**, 2430 Freeland St., San Angelo, Tex. (Age 37. Born Ardmore, Okla.) Sept. 1911–May 1915 and Sept. 1917–May 1918 student, Oklahoma Agricultural and Mechanical Coll. *TT 2.5: P 2.5.*—March 1916 to Sept. 1917 and May 1918 to March 1919 Asst. Engr., Corporation Comm. of Oklahoma, on valuation of public utilities. *TT 2.3: P 2.3.*—March 1919 to Feb. 1921 with State Highway Dept. of Oklahoma, until Sept. 1920 as Asst. Engr. on bridge design and highway work, then Res. Engr., Federal Aid Project No. 17, Union City, Okla. *TT 2.6: P 2.6: RC 1.1: D 0.6.*—Sept. to Dec. 1921 Transitman with Nagle-Witt-Rollins, Cons. Engrs., on highway location. *TT 0.2: P 0.2.*—Dec. 1921 to April 1926 Engr., Atlantic Oil Producing Co., on general and structural engineering. *TT 4.3: P 4.3: RC 3.9: D 1.9.*—April 1926 to March 1927 Dist. Engr., Marland Oil Co. of Texas, general and structural engineering. *TT 0.9: P 0.9: RC 0.9.*—July 1927 to April 1928 on pipe-line location, about 2 weeks as Chf. of Party with United Producers Pipe Line Co., then as Engr., with Illinois Pipe Line Co. *TT 0.8: P 0.8: RC 0.8.*—April 1928 to April 1929 Engr. with L. F. Harza, Cons. Engr., on hydro-electric and structural engineering. *TT 1: P 1.*—June 1929 to date Engr., West Texas Utilities Co., on dam and water supply. *TT 0.9: P 0.9: RC 0.9.*—*TT 15.5: P 15.5: RC 7.6: D 2.5.* Refers to G. H. Ellis, E. N. Floyd, O. N. Floyd, L. F. Harza, J. L. Hershey, J. L. Lochridge, W. H. Meier, J. V. Zahlen.

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(13) **HARRISON, BRADSHAW**, 921 Thirty-Ninth St., Sacramento, Cal. (Age 43. Born Kendal, England.) 1905 to 1908 Student in Civ. Eng., Manchester (England) Univ. *TT 1.5: P 1.5.*—1902 to 1905 (while student) Draftsman with Mather & Platt, Mech. Engrs., Man-

chester, being apprentice in drawing office.—1907 (3 months) Jun. Engr., Leyland Steamship Co., on a freighter.—1908 Levelman and Inspector, Florida East Coast & Air Line R. R., on pile driving and trestle construction. *TT 0.2: SP 0.2.*—1909 to 1912 Levelman, Transitman, Tunnel Inspector and Office Asst., Western Pacific R. R. Co., on construction, Feather River Canyon, Cal. *TT 1.5: SP 1.5.*—1912 Transitman and Draftsman, South Feather Land & Water Co., Oroville, Cal., on surveys, flume construction, diversion dam, etc. *TT 0.2: SP 0.2.*—1912 to 1914 Office Engr., successively with Hilo R. R. Co., Hawaii, on location and construction, design and supervision of construction of frame structures, concrete culverts and steel bridges (1½ years), with Territorial Highway Bureau, Hawaii, on paper location of highway and design of concrete structures (4 months) and with Waihole Water Co., Honolulu, Hawaii, on design of buildings, dock, terminal warehouses, tunnel, open conduit, steel syphons, etc., and paper location of industrial railroad (1 year). *TT 3: P 3: RC 1.5: D 2.8.*—1914 to 1922 with U. S. Army, Hawaiian Dept., until 1917 as Civilian Hydr. Engr. on design and construction of water systems at Schofield Barracks, Fts. Ruger, Kamehameha, De Shaffer and Armstrong, being in charge of two field parties, draftsmen and office at Schofield Barracks, then at same Barracks, 3 years as Asst. Engr. and Inspector of Constr. and on design of sewerage and water systems and two sewage-disposal plants, and 2 years Prin. Asst. Engr. and Supt. of Constr. of Wheeler Field Air Base. *TT 7.2: SP 0.7: P 6.5: RC 6.5: D 5.*—1923 (4 months) Acting Mgr., Wahiawa (Oahu) Water Co., Hawaii. *TT 0.3: P 0.3: RC 0.3.*—1923 to 1925 Constr. Engr., Sattin Constr. Co., Berkeley, Cal., on plans and specifications for brick, hollow-tile and reinforced concrete buildings, estimates of cost, etc. *TT 2: P 2: RC 2: D 2.*—1926 to 1927 Operating Engr., Port Costa (Cal.) Water Co., in charge of construction, operation and maintenance of plant supplying 7 000 000 gal. from 60 deep wells. *TT 0.7: P 0.7: RC 0.7.*—1927 to 1929 Div. Engr., California Water Service Corporation, San Francisco, Cal., in charge of division office, Stockton, Cal., and of twelve plants. *TT 2.1: P 2.1: RC 2.1.*—1929 Asst. to Right-of-Way Engr., Div. of Highways, San Francisco, appraisals, descriptions, earthwork estimates and mass diagrams. *TT 0.7: P 0.7.*—1929 to date Asst. Hydr. Engr., Div. of Water Resources, California, on report of economic aspects of a salt water barrier below confluence of Sacramento and San Joaquin Rivers; special assignment, industrial and municipal water supply, industrial wastes, water-front structures. *TT 0.5: P 0.5: RC 0.5.*—*TT 19.8: SP 2.6: P 17.2: RC 15.6: D 9.8.* Refers to G. W. Armitage, E. E. Blackie, G. M. Collins, G. K. Larrison, F. Ohrt, W. Reinhardt.

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(2) HARTZOG, JUSTIN RICHARDSON, 83 Brattle St., Cambridge, Mass. (Age 37. Born Ada, Ohio.) 1914 B. S., Denison Univ., and 1917 Master of Landscape Design, Cornell Univ. *TT 2: P 2.*—May 1917 to March 1921 with U. S. Army, until Aug. 1917 as Candidate, Officers' Training Camp, Madison Barracks, N. Y., Aug. 1917 to Nov. 1919 2d Lieut. and 1st Lieut., Q. M. Corps, being Asst. to Chf., Constr. Div. (Camp Planning Section) preparing building schedules, layout plans for military organizations, camps, hospitals, post extensions, inspection of sites, Nov. 1919 to July 1920 Asst. to Engr. in charge of Camp Planning Constr. Div., War Dept., on reconstruction plans and compiling reports, and after July 1920 Asst. to Constructing Quartermaster, Camp Travis, Tex., on reconstruction plan for Camp Travis and compiling of completion reports. *TT 3.6: SP 0.2: P 3.4: RC 3.4: D 1.3.*—March 1921 to June 1922 professional study and travel in Europe.—June 1922 to date Draftsman, Asst. and Associate of John Nolen, City Planner, Cambridge, Mass., on design plan of athletic field and park for General Elec. Co., Schenectady, N. Y., and construction plans for Mariemont, Ohio (1922), design plans for parks and subdivisions, survey, city and zone plans and ordinance, report for North Adams, Mass. (1923), surveys, city, zone, regional, thoroughfare, park system and detail design plans, subdivision design and reports, etc., for Sarasota, Clearwater and St. Petersburg, Fla., Columbus, Ga., Little Rock, Ark., etc., also on reconnaissance survey and report on city planning, detail plan for street widenings, etc., for Roanoke, Va., etc. *TT 7.8: P 7.8: RC 6: D 4.*—*TT 13.4: SP 0.2: P 13.2: RC 9.4: D 5.3.* Refers to R. C. Allen, R. V. Black, T. S. Johnson, P. J. MacNaughton, J. Nolen.

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(7) HINKAMP, GRANT MILTON, 1210 Forty-Ninth Street, Milwaukee, Wis. (Age 39. Born Milwaukee, Wis.) 1913 B. S. in C. E., Purdue Univ. *TT 4: P 4.*—June 1913 to March 1914 Asst. Engr., Milwaukee Elec. Ry. & Light Co., on surveys, inspection of track construction, cost analyses, estimates. *TT 0.3: SP 0.3.*—April to Dec. 1918 with U. S. Army, Utilities Branch of Constr. Div., Quartermaster Corps, on design, construction and maintenance of sewerage system, Camp Custer, Mich. *TT 0.5: P 0.5: RC 0.5: D 0.2.*—March 1914 to Sept. 1922 (except April to Dec. 1918) with Sewerage Comm., Milwaukee, Wis., until

June 1916 as Jun. Engr. on surveys, investigations, runoff determinations, inspection of sewer construction and acting as Res. Engr. on sewage-testing station, then Senior Engr. being Res. Engr. on sewer construction projects, and after Feb. 1917 Div. Engr., in charge of several residencies on sewer, tunnel, siphon and special-structure construction, investigations, tests, design and construction of intercepting structures, drainage divide surveys and investigations of suburban sewerage systems. *TT 7.8: SP 0.3: P 7.5: RC 6.7: D 1.*—Sept. 1922 to Feb. 1928 Engr. and Supt., Knowles and Fehr, Inc., Contrs., Milwaukee, in charge of construction of sewers in open cut and tunnel, various types of construction, tunnel work for Sewerage Comm. of Milwaukee, also water-filtration plant at Lake Forest, Ill. (Pearse, Greeley & Hansen, Engrs.) and sewer in tunnel and open cut at Kohler, Wis. *TT 5.5: P 5.5: RC 5.5: D 0.8.*—May to July 1928 Engr., Bentley Bros., Contrs., Milwaukee, on bridge construction. *TT 0.2: P 0.2: RC 0.2.*—April to Oct. 1929 Engr. and Supt. with G. R. Fehr, Contr., in charge of sewer construction for Sewerage Comm., rock tunnel work and Oct. 1929 to date Vice-Pres. and Supt., G. R. Fehr, Inc., Engrs. and Contrs., at Milwaukee, Wis., in charge of tunnel work for Dept. of Public Works. *TT 1.1: P 1.1: RC 1.1: D 0.2.*—*TT 19.4: SP 0.6: P 18.8: RC 14: D 2.2.* Refers to J. L. Ferebee, T. C. Hatton, A. L. Kurtz, R. R. Lundahl, W. R. Reuter, D. W. Townsend, G. R. Young.

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(15) HOWARD, DUDLEY CHARLES, 607 Woodlawn, Dallas, Tex. (Age 31. Born Hardin, Ky.) Sept. 1916 to June 1920 student, Coll. of Arts and Sci. (1 year) and Coll. of Civ. Eng. (3 years), Univ. of Kentucky. *TT 2: P 2.*—June 1920 to May 1921 Asst. Res. Engr., Kentucky Highway Dept., instrument work and inspection on asphalt paving (5 months), Instrumentman on grade and drain project (6 months). *TT 0.5: SP 0.5.*—May to June 1921 Instrumentman, Oklahoma Dept. of Highways. *TT 0.1: P 0.1.*—June 1921 to June 1923 Field Engr. for Carter County, Okla., in responsible charge of location and construction of roads and bridges (subject to Oklahoma Dept. of Highways, bond issue \$500 000). *TT 2: P 2: RC 2.*—June to Sept. 1923 Civ. Engr., Riverside Min. Co., Twin Falls, Idaho, surveying mining claims and locating mining machinery. *TT 0.2: P 0.2.*—Sept. 1923 to Dec. 1924 with Nevada State Highway Dept., on Federal Aid projects, as Inspector on overpass over Western Pacific R. R. Co. (3 months), Instrumentman (5 months) and Asst. Res. Engr. and Acting Res. Engr. (7 months) on grade, drain and surface work. *TT 1.3: P 1.3: RC 0.5.*—Dec. 1924 to date Civ. Engr., Magnolia Petroleum Co., Dallas, on surveying, mapping, location of wells, pipe lines and pump stations, etc. *TT 5.3: P 5.3.*—*TT 11.4: SP 0.5: P 10.9: RC 2.5.* Refers to E. C. Brown, J. S. Dawson, J. W. Hughes, H. M. Loy, E. B. Nelson, R. B. Pearce, C. H. Rightmire, D. V. Terrell.

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(13) INGRAHAM, RICHARD WILLIAM, 1432 F St., Napa, Cal. (Age 30. Born Schenectady, N. Y.) Prior to 1923 (2 years) student, Univ. of Wis. *TT 1: P 1.*—April 1923 to March 1924 Eng. Inspector on sewer construction, Metropolitan Sewerage Comm., Milwaukee, Wis., also (winters) acted as Rodman and Recorder on topography. *TT 0.5: SP 0.5.*—March to Aug. 1924 Inspector, Wisconsin State Highway Comm., on concrete highway construction, work including inspection of materials at gravel pits and of construction of a small bridge, and Rodman on location. *TT 0.3: SP 0.2: P 0.1: RC 0.1.*—Aug. 1924 to May 1925 with City of Muskegon Heights, Mich., 4 months as Inspector of construction of concrete pavements and 5 months Asst. City Engr., on design, preliminary surveys and field engineering on construction of minor sewer projects, storm drains and water-main layouts. *TT 0.6: SP 0.2: P 0.4: RC 0.4.*—March 1926 to Aug. 1928 with City of Waukegan, Ill., 1 year as City Draftsman on field engineering for construction of sewers, storm drains, water distribution and sidewalks, and 1½ years Senior Instrumentman, being Acting Asst. City Engr., on design of paving projects, sewer, water and storm drains, city surveys, etc. *TT 2.5: P 2.5: RC 2.5: D 1.5.*—Aug. 1928 to Feb. 1929 Design Draftsman, Bureau of Yards and Docks, U. S. Navy, Marine Barracks, Parris Island, S. C., drawing topographic and sub-surface maps from field notes. *TT 0.5: P 0.5: RC 0.5.*—Feb. 1929 to Jan. 1930 Asst. Inspector of construction, Naval Ammunition Depot, Hawthorne, Nevada, assisting in design of 10-mile water-supply system, some field engineering and in responsible charge of inspection of installation of the system, also on design of pavements. *TT 0.7: SP 0.2: P 0.5: RC 0.5: D 0.1.*—Jan. 1930 to date Asst. Inspector, Mare Island (Cal.) Navy Yard, inspecting construction under contract in 12th Naval Dist. *TT 0.2: P 0.2: RC 0.2.*—*TT 6.2: SP 1: P 5.2: RC 4.2: D 1.6.* Refers to R. J. Buck, C. H. Cotter, T. C. Hatton, G. E. Sievers, W. C. West, G. R. Young.

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(5) JACOBS, HARRY VICTOR, 1800 E St. N. W., Washington, D. C. (Age 29. Born in Washington County, Md.) Aug. 1918 to March 1923 with San. Engr.'s Office, Washington, D. C., until July 1920 as Rodman, chaining and drafting, on location and construction of

sewers, then Skilled Laborer, being Transitman, Levelman and Inspector on construction of sewers, etc. *TT 2.4: SP 2.4*.—March 1923 to date with W. N. Brown and (since Feb. 1929) W. N. Brown, Inc., Washington, D. C., as follows: March to July 1923 Chairman, July 1923 to July 1924 Transitman, drafting, some planetable work, also computing; July 1924 to Oct. 1925 Chf. of Party on transit, levels, planetable topography, being general Utilityman; Oct. 1925 to Feb. 1929 Res. Engr. and Feb. 1929 to date Treas. and Res. Field Engr., in complete charge of topographic lot, road layout and property surveys. *TT 6.3: SP 0.6: P 5.7: RC 4.3: D 3.7*.—*TT 8.7: SP 3: P 5.7: RC 4.3: D 3.7*. Refers to F. J. Biele, A. F. Brooke, W. N. Brown, T. E. Ringwood, M. T. Singleton, S. L. Thomsen.

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(11) JONES, HUGH, Care, Colorado River Survey, Ludlow, Cal. (Age 29. Born Portland, Ore.) 1922 B. S. in Civ. Eng., Ore. State Coll. *TT 4: P 4*.—June to Dec. 1922 Instrumentman, National Park Service, on highway location and construction. *TT 0.3: SP 0.3*.—Feb. to July 1923 Levelman, Portland Elec. Power Co., on pipe line location. *TT 0.2: SP 0.2*.—July 1923 to Nov. 1926 with Southern Pacific Co., until July 1924 as Rodman and Draftsman on maintenance, then Instrumentman and Asst. Res. Engr., on construction of Natron Cut Off. *TT 2.6: SP 0.6: P 2: RC 2*.—Dec. 1926 to June 1929 Chf. of Party, A. E. Bell Corporation, on land subdivision, installation of public utilities, street construction, paving, etc. *TT 2.6: P 2.6: RC 2.6*.—Oct. 1929 to date with Metropolitan Water Dist. of Southern California, on Colorado River Project, until Dec. 1929 as Topographic Draftsman, and since Jan. 1930 Chf. of Party on aqueduct location. *TT 0.4: SP 0.1: P 0.3: RC 0.3*.—*TT 10.2: SP 1.3: P 8.9: RC 4.9*. Refers to G. E. Baker, J. B. Bond, R. B. Diemer, B. A. Eddy, A. LeVan, H. G. Matthews, S. H. Sims, W. Woodard.

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(10) KAVANAGH, GERALD RODGERS, 636 Power Bldg., Chattanooga, Tenn. (Age 29. Born Knoxville, Tenn.) 1923 B. S. in E. E., Univ. of Tenn. *TT 4: P 4*.—April to Aug. 1927 Director, Dept. of Health, Bureau of San. Eng., Chattanooga, Tenn., in responsible control of milk, water, food, mosquito and sewage. *TT 0.3: P 0.3: RC 0.3: D 0.3*.—June 1923 to April 1927 and Aug. 1927 to date San. Engr., Wallace & Tiernan Co., Newark, N. J., on specifications for and supervision of water-sterilizing and sewage-treatment equipment and in responsible charge of specifications, arrangement, installation and operation of chemical feed apparatus for treatment of water and sewage. *TT 4.7: SP 1.9: P 2.8: RC 2*.—*TT 9: SP 1.9: P 7.1: RC 2.3: D 0.3*. Refers to A. C. Decker, A. E. Gorman, W. A. Hardenbergh, W. R. King, A. R. Murphy, G. D. Peet, W. G. Stromquist.

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(1) KELLY, EARL MICHAEL, 714 Central Bldg., Los Angeles, Cal. (Age 25. Born Buffalo, N. Y.) 1926 B. S. in C. E., Univ. of Colo. *TT 4: P 4*.—Summers 1923–1925 Eng. Laborer, Colorado State Highway Dept., on traffic survey and drafting. June to Sept. 1926 Draftsman, Burkhardt Steel Co. of Denver, Colo., designing and detailing steel structures. *TT 0.1: SP 0.1*.—Sept. 1926 to Nov. 1927 Designer, Moffat Tunnel Comm., Denver, detailing and designing steel and concrete structures, etc. *TT 1.2: P 1.2: D 1.2*.—Nov. 1927 to date with Dorr Co., Engrs., Denver, until May 1928 as Designer, designing and detailing steel structures, then Field Engr., erecting, inspecting and operating sewage- and water-treatment equipment, and since June 1929 Engr., cooperating with consulting engineers in furnishing information regarding equipment for sanitary work. *TT 2.6: P 2.6: RC 2: D 0.5*.—*TT 8: SP 0.2: P 7.8: RC 2: D 1.7*. Refers to C. A. Betts, F. R. Dungan, C. L. Eckel, H. J. Gilkey, W. C. Huntington.

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(1) KETELS, WALTER RICHARD, Box 922, Somerville, N. J. (Age 43. Born Brooklyn, N. Y.) 1912 to 1917 Rodman, Transitman and Instrumentman, Delaware, Lackawanna & Western R. R., Hoboken, N. J., on construction of track, docks, bridges, etc., alignments, maintenance and drafting. *TT 3.9: SP 1: P 2.9*.—1917 to 1920 Engr. of Constr., R. R. Dept., Submarine Boat Corporation, Port Newark, N. J., tracks, etc. *TT 2.9: P 2.9: RC 2.9*.—1920 to 1921 Engr., Lehigh Valley R. R., New York City, on dock and track construction, surveying. *TT 1.6: P 1.6: RC 1.6*.—1922 to 1923 Asst. Engr., Road Dept., New Jersey State Highway Dept., Trenton, in charge of construction in field. *TT 0.4: P 0.4: RC 0.4*.—1923 Engr. with Remington & Vosbury, Engrs., Camden, N. J., city work. *TT 0.4: P 0.4: RC 0.4*.—1923 to date Res. Engr., New Jersey State Highway Dept., Trenton, in charge of all field engineering, construction inspectors, estimating, etc., on construction of bridges (\$10 000 to \$1 500 000), including Federal St. Viaduct and Cooper St. Bascule Bridge, Camden, Rancocas River Bascule Bridge, Bridgeboro, and concrete arch bridge over Raritan River, New Brunswick (\$225 000, \$470 000, \$360 000 and \$1 500 000 respectively). *TT 6.6: P 6.6: RC 6.6*.—*TT 15.8: SP 1: P 14.8: RC 11.9*. Refers to W. F. Buchanan, M. Goodkind, T. G. Griggs, J. E. Jones, M. D. Kolyn, J. C. Remington, Jr., J. L. Vogel.

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(1) KOSCHES, REUBEN, 895 West End Ave., New York City. (Age 37. Born New York City.) Prof. Engr., New York State.—1912 B. S., Coll. of City of N. Y. *TT 4: P 4.*—May 1913 to 1919 with Public Service Comm., New York City, until April 1914 as Jun. Asst. on alignment and grade, inspection, etc., then Jun. Draftsman (3 years) and Draftsman (2 years), designing and detailing reinforced concrete and steel stairways, signal towers, trainmen's houses and subway ventilation. *TT 8: SP 3.*—1919 to date with Transit Constr. Comm. and Transit Comm., New York City, until 1925 as Draftsman (5 years) and in charge of squad (1 year), designing and detailing reinforced concrete and steel structures and parts of subways and elevated lines, including some checking and remodeling; 1925 to 1928 Designer in charge of squad designing, detailing and checking reinforced concrete and steel yards and shops and parts of subway and elevated lines also advising construction engineers; since 1928 Asst. Designing Engr. in charge of designing and detailing of ventilation, electrical work, miscellaneous steel and reinforced concrete structures for subways and elevated lines. *TT 10: SP 1: P 9: RC 6: D 10.*—*TT 17: SP 4: P 13: RC 6: D 10.* Refers to C. E. Conover, H. L. Hurd, G. L. Lucas, J. H. Quimby, A. I. Ralsman, R. Ridgway, J. R. Slattery.

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(6) LAMB, ARTHUR, Verona Road, Verona, Pa. (Age 39. Born Sheffield, England.) Student (3 years) Dept. of Applied Science, Sheffield Univ. *TT 1.5: P 1.5.*—March 1913 to Feb. 1921 Structural Draftsman, successively with Cambria Steel Co., Johnstown, Pa., Riter-Conley Mfg. Co., Leedsdale, Pa., Heyl & Patterson Co., Pittsburgh, Pa., American Bridge Co., Ambridge (Pa.) Plant, and The Koppers Co., Pittsburgh, checking conveyor, bridges and towers for latter company. *TT 7: SP 1: P 6.*—May 1921 to March 1922 Designer, United States Coal and Coke Co., Gary, W. Va., on coal tipples and cleaning plants. *TT 0.8: P 0.8: D 0.8.*—March to Oct. 1922 Estimator, Pittsburgh (Pa.) Bridge and Iron Co., on mill buildings and bridges. *TT 0.6: P 0.6: D 0.6.*—Oct. 1922 to June 1927 Structural Designer, The Koppers Constr. Co., Pittsburgh, Pa., on by-product plants, gas-producer buildings, coal- and coke-handling structures, last six months being in charge of design squad. *TT 4.6: P 4.6: RC 0.5: D 4.6.*—June 1927 to date Chf. Engr., Pittsburgh Eng. Foundry & Constr. Co., supervising design of material-handling and storage systems, coal tipples, screening plants, mill buildings, etc. *TT 2.9: P 2.9: RC 2.9: D 0.5.*—*TT 17.4: SP 1: P 16.4: RC 3.4: D 6.5.* Refers to F. C. Carstarphen, J. Lowery, W. J. Sheldon, M. C. Steuber, E. S. Taylor, F. W. Townrow, W. A. Welsh.

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(12) LANGE, BERNICE, 1205 North Forty-Sixth St., Seattle, Wash. (Age 23. Born Minneapolis, Minn.) 1930 B. S. in C. E., Univ. of Wash. *TT 4: P 4.*—Sept. 1923 to March 1928 (while student) with Gardner, Gardner & Fischer, Inc., Seattle, Wash., computing, map drafting, etc.—March 1928 to Oct. 1929 computing and structural drafting, Eng. Dept., Seattle. *TT 4: P 4.* Refers to I. L. Collier, J. B. Hamilton, C. C. More, R. G. Tyler.

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(3) LAW, CHARLES WILLIAM, 506 West German St., Herkimer, N. Y. (Age 28. Born Fairfield, N. Y.) 1925 C. E., Pa. Mil. Coll. *TT 4: P 4.*—June 1925 to April 1929 Supt. of Constr., Law Bros. Contr. Corporation, Herkimer, N. Y., on highway, bridge and reservoir construction for State of New York. *TT 3.6: P 3.6: RC 3.6.*—April 1929 to March 1930 Supt. of Constr., Mohawk Dredge & Dock Co., Herkimer, on grade-crossing elimination for Delaware, Lackawanna & Western R. R. Co., Willowvale, N. Y. *TT 0.9: P 0.9: RC 0.9.*—*TT 8.5: P 8.5: RC 4.5.* Refers to E. B. Baker, A. J. Boase, H. B. Brewster, L. D. Brownell, J. A. O'Connor, H. A. Van Alstyne.

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(10) LAWRENCE, ROBERT LANDY, Jr., City Hall, Nashville, Tenn. (Age 26. Born Murfreesboro, Tenn.) 1925 B. E. in Civ. Eng., Vanderbilt Univ. *TT 4: P 4.*—June-Aug. 1925 Bridge Inspector, Tennessee State Highway Dept., setting grades, inspecting steel and concrete, checking forms, etc. *TT 0.1: SP 0.1.*—Sept. 1925 to date Engr. and Draftsman, Water-Works Dept., Nashville, Tenn., estimating and designing pipe lines, designing special castings, pump foundations, etc., supervising installation of large mains (underground and on bridges); designed and prepared drawings for installation of two 10 000 000-gal. turbo-centrifugal pumping units and drew specifications for same (under supervision of Supt. of Dept.), supervised tests on steam turbines, centrifugal pumps, electric motors and gas-engine-driven pumps, keeps plot records of water-main extensions, etc.; also on outside consulting work, including design, specifications and supervision of construction of a concrete dam (100 ft. by 12 ft.) and a reinforced concrete dam (50 ft. by 7 ft.); makes suggestions in regard to small pumping plants and booster-pumping stations (privately owned) con-

nected with Nashville Water-Works system. *TT 4.7: P 4.7: RC 3: D 4.5.—TT 8.8: SP 0.1: P 8.7: RC 3: D 4.5.* Refers to J. T. Campbell, L. R. Currey, Jr., D. E. Davis, F. E. Freeland, C. H. Olmstead.

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(13) LEUPOLD, NORBERT HERMAN, 1615 Gough St., Apt. 6, San Francisco, Cal. (Age 23. Born Boston, Mass.) 1929 B. S. in Civ. Eng., Ore. State Coll. *TT 4: P 4.*—Summer 1927 Chairman, T. P. Timber Co., Kerry, Ore., logging railroad location and construction.—Summer 1928 Earthwork Inspector, Eugene (Ore.) Water Board, on canal excavation, hydro-electric project, Leaburg, Ore.—June 1929 to March 1930 with Pacific Power and Light Co., Portland, Ore., and March 1930 to date with Pacific Gas and Elec. Co., San Francisco, Cal., as Draftsman on general drafting work. *TT 0.4: SP 0.4.—TT 4.4: SP 0.4: P 4.* Refers to C. B. McCullough, C. A. Mockmore, H. S. Rogers, J. C. Stevens.

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(4) LIGHTFOOT, HAROLD COUNSEL, Broomall, Pa. (Age 40. Born Philadelphia, Pa.) Registered Prof. Engr., State of Pennsylvania. 1913 B. S. in San. Eng., Pa. State Coll. *TT 4: P 4.*—Aug. 1906 to Sept. 1909 Rodman, Bureau of Filtration, and Sept. to Nov. 1913 Inspector, Bureau of Highways, Philadelphia, Pa. *TT 1.6: SP 1.6.*—Nov. 1913 to Feb. 1914 computer, Morgan Eng. Co., Memphis, Tenn., estimating discharges and run-off of streams and plotted field notes for Coldwater Drainage Project. *TT 0.1: SP 0.1.*—March 1914 to March 1915 Surveyman, U. S. Reclamation Service, Fort Shaw, Mont., Sun River Project, Mont., on lines and grades for construction of dam, 3 miles of tunnels and 12 miles of canal, made monthly estimates, designed concrete forms for lining tunnels and portals, and March to Oct. 1915 as Supt. for Olaf Olson, Sub-Contr. for McArthur Bros., New York City, built the tunnel portals. *TT 1.4: SP 0.3: P 1.1: RC 0.6: D 0.5.*—May 1916 to Jan. 1917 Chf. of Party, Pugh & Hubbard, Engrs., Philadelphia, on survey of real estate tracts and industrial plants, also in office on design of new tracts. *TT 0.7: P 0.7: RC 0.7: D 0.3.*—Oct. 1917 to June 1918 Supt., Quartermasters Corps, Camp Lee, Va., water-works and sewers, organized department, supervised operation of sewer and water systems, plumbing repairs and construction. *TT 0.7: P 0.7: RC 0.7: D 0.3.*—June 1918 to June 1919 Master Engr., 305th Engrs., 80th Div., A. E. F., repairing roads and trenches. *TT 1: P 1: RC 1.*—Jan. to Oct. 1917 and June 1919 to May 1920 Structural Draftsman, City Transit Dept., Philadelphia, on steel and concrete design of subway, elevated and station structures. *TT 0.9: SP 0.9: D 0.9.*—Sept. 1920 to Jan. 1921 Inspector, Pennsylvania State Highway Dept., on concrete road construction (5 miles). *TT 0.1: SP 0.1.*—May 1921 to March 1923 Engr. Damon & Foster, Engrs., Upper Darby, Pa., being Office Engr. on property surveys, real estate developments, sewers, roads, water-works and sewage-disposal plants. *TT 1.8: P 1.8: D 1.8.*—March 1923 to Sept. 1926 in private practice as Engr. and Bldr., Philadelphia, Pa., designing, estimating and constructing garages, apartments and houses. *TT 3.3: P 3.3: RC 3.3: D 1.6.*—Sept. 1926 to Feb. 1928 Engr., Day & Zimmermann, Philadelphia, being Chf. of Party on property surveys, Conowingo Transmission Line and Res. Engr. at Conowingo, supervised assembly of steel work for switching structure. *TT 1.4: P 1.4: RC 1.4.*—Sept. to Nov. 1928 Structural Designer, United Engrs., Philadelphia, Pa., on design of grillage footings, 20-story building, Pennsylvania R. R. *TT 0.2: P 0.2: D 0.2.*—Feb. to Sept. 1928 and Nov. 1928 to May 1929 in private practice on property surveys, building design and estimates. *TT 0.9: P 0.9: RC 0.9: D 0.9.*—May 1929 to date Squad Boss, United Engrs. & Constrs., Philadelphia, Pa., on design of manholes and conduits for underground distribution of new signal and power ducts in Philadelphia Improvement area of Pennsylvania R. R. *TT 1: P 1: RC 1: D 1.—TT 19.1: SP 3: P 16.1: RC 9.6: D 6.9.* Refers to A. F. Damon, Jr., V. R. Dunlap, J. T. Kiernan, M. R. Pugh, W. W. Reeder, A. H. Reeves, I. S. Walker.

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(6) LOCKHART, GEORGE BURGWIN, Care, F. W. Droste, Ronceverte, W. Va. (Age 23. Born Charlotte, N. C.) 1929 B. S. in Civ. Eng., Univ. of N. C. *TT 4: P 4.*—June 1929 to date with Chesapeake & Ohio Ry. Co., until Feb. 1930 as Recorder with valuation field party, then Rodman. *TT 0.4: SP 0.4.—TT 4.4: SP 0.4: P 4.* Refers to G. M. Braune, T. F. Hickerson, R. Snell.

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(5) LOEHLER, PAUL FREDRICK, 4007 Connecticut Ave. N. W., Washington, D. C. (Age 29. Born Washington, D. C.) 1924 B. S. in C. E., George Washington Univ. *TT 4: P 4.*—June 1924 to date Gen. Mgr. and Supt. of Constr., G. G. Loehler Constr. Co., Inc., Engrs. and Bldrs., Washington, D. C., estimating, designing, checking, supervising office routine and in responsible charge of all field construction on schools, apartments, churches, ware-

houses, office buildings, road work, subdivision development, etc.; past 2 years also Officer and Director of Corporation. *TT 5.8: P 5.8: RC 5.8.—TT 9.8: P 9.8: RC 5.8.* Refers to O. B. French, J. R. Lapham, J. G. Loehler, H. Miller, J. W. Oehmann.

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(10) LORENCE, WALTER ERNEST, Box 1017, Memphis, Tenn. (Age 36. Born Hoboken, N. J.) 1918 2d Lieut., Corps of Engrs., U. S. Mil. Acad. 1920 C. E., Engr. School. U. S. Army. 1923 M. S., Colo. School of Mines. *TT 4: P 4.*—May 1912–April 1915 Chainman, Rodman and Instrumentman with Erie R. R., Chicago, Milwaukee & St. Paul Ry. and Chicago & North Western Ry. *TT 1.3: SP 1.3.*—June 1918 to date with Corps of Engrs., U. S. Army, engaged as follows: June to Aug. 1918 1st Lieut., being Instructor, Engr. Officers' Training Camp, Camps Lee and Humphreys, Va.; Aug. 1918 to Nov. 1925 Capt. commanding Co. E, 211th Engrs., at Camp Forrest, Ga., and Camp Meade, Md. (about 7 months), post-graduate student in Civ. Eng. (1½ years), and student in Mil. Eng. and Astronomical Surveying (3 months), U. S. Engr. School, Camp Humphreys, Camp Constr. and Utilities Officer, Camp Humphreys (3 months), and Prof. of Military Science and Tactics and of Hygiene and Camp Sanitation, Military Commandant, Reserve Officers' Training Camp, Engr. Battalion, Colorado School of Mines (about 5 years); since Dec. 1925 1st Lieut., being Asst. Dept. and Dist. Engr., Philippine Dept., Manila, Philippine Islands, in charge of military survey of the Philippines, construction and repair of defensive works (2½ years), Asst. Dist. Engr., Mississippi River Dredging Dist., Memphis, Tenn., being Executive Officer and Disbursing Officer, in charge of plant and equipment, repair, construction and design (about 7 months) and (since Sept. 1928) Officer-in-Chg., Supply and Repair Depot, Memphis Engr. Dist., being in charge of purchase, storage and issue of supplies, design, tests, construction and repair of floating and shore plant, etc., for flood control. *TT 11.1: P 11.1: RC 5.7: D 2.—TT 16.4: SP 1.3: P 15.1: RC 5.7: D 2.* Refers to O. D. Filley, H. S. Gladfelter, F. I. Louckes, C. F. Maynard, W. A. K. Parkin, H. V. Pittman, B. A. Ross, H. A. Seran, W. D. Waltman.

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(4) LUCINSKI, DANIEL JOSEPH, 1421 Arch St., Philadelphia, Pa. (Age 25. Born Haverhill, Mass.) 1929 B. S. in Civ. Eng., Univ. of N. H. *TT 4: P 4.*—Summer 1928 Chainman, and Rodman, and June to July 1929 Instrumentman, Boston & Maine R. R., on survey and maintenance drafting.—July to Aug. 1929 Instrumentman, Massachusetts Dept. of Public Works, Boston, on road survey, platting, etc. *TT 0.1: SP 0.1.*—Aug. 1929 to date Jun. Lighthouse Engr., U. S. Lighthouse Service, on inspection, design, survey and maintenance. *TT 0.5: SP 0.2: P 0.3.—TT 4.6: SP 0.3: P 4.3.* Refers to E. W. Bowler, G. W. Case, J. S. Conway.

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(7) MACDONALD, ROBERT FERGUSEN, St. Regis Apartments, Duluth, Minn. (Age 35. Born Duluth, Minn.) June 1914 to July 1917 Chainman, Rodman and Instrumentman, Duluth Eng. Co., platting subdivisions, etc. *TT 1.5: SP 1.5.*—July 1917 to Jan. 1919 Corporal, Battery B, 126th Field Artillery, A. E. F.—March 1919 to date with St. Louis County Highway Dept., Duluth, Minn., until July 1919 as Instrumentman, then Asst. Engr. in charge of party on location, design and construction of county and State Aid roads (approx. \$200 000 annually). *TT 11.1: SP 0.3: P 10.8: RC 10.8: D 10.8.—TT 12.6: SP 1.8: P 10.8: RC 10.8: D 10.8.* Refers to L. Ayres, A. J. Bawden, G. W. Deibler, E. H. Dresser, T. F. McGilvray, A. Norberg, S. B. Shepard.

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(13) McAFEE, LLOYD TEVIS, City Hall, San Francisco, Cal. (Age 48. Born San Francisco, Cal.) June to Sept. 1901 Chainman, Rodman and Levelman on railroad surveys, Shasta County, Cal., and Sept. 1901 to June 1903 Instrumentman, on surveys for proposed power projects, Kings County, Cal., under J. B. and C. S. Rogers, Civ. Engrs. *TT 1: SP 1.*—June 1903 to June 1904 Chainman and Instrumentman, Western Pacific R. R. *TT 0.5: SP 0.5.*—June 1904 to Jan. 1905 Res. Engr., North Mountain Power Co., Trinity County, Cal., in charge of ditch tunnel and flume construction, also surveys. *TT 0.3: SP 0.3.*—Jan. 1905 to Aug. 1909 with Ocean Shore Ry. Co. as Instrumentman and (3 years) Res. Engr. in charge of 20 miles of heavy construction. *TT 4: SP 0.5: P 3.5: RC 3.5.*—Aug. 1909 to date with Bureau of Eng., City and County of San Francisco, as follows: 1909 to 1912 Asst. Engr., under City Engr., in charge of construction of cisterns, storm and sanitary sewers (diameter, 12 ft. to 8 in.), high-pressure fire system, 20 miles of pipe and Mission Viaduct (total approx. \$2 000 000); 1912 to 1917 Asst. Engr., under City Engr., in charge of construction of Fort Mason pumping station (high pressure fire system); Stockton Street and Twin Peaks Tunnels (total approx. \$4 000 000); 1917 to March 1930 Constr. Engr., Hetch Hetchy Water Supply, under City Engr., until 1921 in charge of construction of

ditch, flume, tunnel, power house (4 500 h. p.) and Lake Eleanor Dam and of excavation for O'Shaughnessy Dam foundations, Tuolumne County, Cal. (total approx. \$750 000); after 1921 in charge of construction of 36 miles of tunnel (10-ft. 3-in. concrete lined and 13-ft. 4-in. by 13-ft. 6-in. unlined), Priest and Moccasin earthfill dams, Moccasin Power House (100 000 h. p.) and penstocks (total cost \$30 000 000); supervision of this work involved collaboration in design by frequent conferences with designers and recommendations as to most suitable design to suit ground and construction conditions; since March 1930 Chf. Asst. City Engr. TT 20.7: P 20.7: RC 20.7.—TT 26.5: SP 2.3: P 24.2: RC 24.2. Refers to N. A. Bowers, N. A. Eckart, M. M. O'Shaughnessy, C. R. Rankin, L. W. Stocker.

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(11) McCASLAND, STANFORD PAUL, 425 Winthrop Road, San Marino, Cal. (Age 24. Born San Francisco, Cal.) 1927 A. B. in C. E., Stanford Univ. TT 4: P 4.—March 1927 to March 1929 Jun. and Asst. Engr., Los Angeles (Cal.) Gas & Elec. Corporation, on design and valuation of pipe lines. TT 2: P 2.—March 1929 to date Jun. Engr., Pacific Telephone & Telegraph Co., Los Angeles, in charge of location party. TT 1.2: P 1.2: RC 0.5.—TT 7.2: P 7.2: RC 0.5. Refers to R. F. Brown, S. B. Morris, C. Moser, L. B. Reynolds, C. B. Wing.

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(13) McLEAN, WALTER REGINALD, Camp Pardee, Valley Springs, Cal. (Age 26. Born Washington, Cal.) July 1919 to March 1923 with California Highway Comm., Sacramento, until March 1921 as Laboratory Asst., testing concrete bituminous mixtures and concrete aggregates, then Rodman and Chalmers on location, and after Nov. 1921 Draftsman, tracing plans, checking estimates, etc. TT 1.9: SP 1.9.—April 1923 to Sept. 1924 Instrumentman, Western States Gas & Elec. Co., Byllesby Eng. & Management Corporation, El Dorado hydro-electric development, Placerville, Cal., on penstock construction, wood stave pipe line and two earth-fill dams. TT 0.7: SP 0.7.—Oct. 1924 to March 1925 Jun. Hydr. Engr., State Div. of Eng. and Irrigation, Sacramento, compiling data for State Water Resources Investigation. TT 0.3: SP 0.3.—March to Oct. 1925 Draftsman with C. H. Wildman, C. E., Placerville, compiling and drawing official map of El Dorado County. TT 0.3: SP 0.3.—Nov. 1925 to July 1927 Instrumentman and Draftsman, H. M. Byllesby Co., Chicago, Ill., on surveys for reservoir sites, canals, conduits, power-house locations and transmission lines, Middle Fork Feather River Hydro-Electric Development. TT 0.9: SP 0.9.—Aug. to Sept. 1927 Asst. Engr. with County Surveyor, San Rafael, Cal., on construction and bituminous surfacing of 3 miles of highways. TT 0.2: P 0.2.—Oct. 1927 to date Asst. Engr., East Bay Municipal Utility Dist., Oakland, Cal., on Mokelumne project, being Asst. in charge of concrete construction on 15 miles of 65-in. steel-pipe aqueduct (\$2 000 000) and (since May 1928) in direct charge (under Res. Engr.) on south spillway, Pardee dam and power house (\$8 000 000). TT 2.6: P 2.6: RC 0.6.—TT 6.7: SP 4.1: P 2.8: RC 0.6. Refers to A. D. Edmonston, F. J. Grumm, C. E. Grunsky, Jr., J. H. Lane, J. S. Longwell, E. L. Macdonald, J. Munn.

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(7) MAGNUSON, FRANCIS JOSE, 1422 Hewitt Ave., St. Paul, Minn. (Age 33. Born Hifis-boro, N. Dak.) Dec. 1917 to March 1919 Corporal, Topographical Sec., 5th U. S. Engrs., 7th Div., A. E. F., being student in military engineering at Camp Scurry, Tex. (about 4 months), also Instrumentman, Recorder, Draftsman, Sketcher and Chf. of Party in United States and France. TT 0.7: SP 0.7.—April 1919 to April 1922 with St. Louis County Eng. Dept., Duluth, Minn., as Field Draftsman, Rodman, Instrumentman and Computer on location, design and construction of main trunk highways (approx. 150 miles). TT 2.2: SP 0.7: P 1.5: RC 0.5: D 1.—April 1922 to May 1923 Computer, Minnesota State Highway Dept., St. Paul, on design of trunk highways, laying balanced grades, computing and making plans for grading highways (approx. 75 miles). TT 0.6: SP 0.6.—May 1923 to date with City Engr.'s Office, St. Paul, until March 1924 as Computer, on computations and plans for grading and paving streets and alleys, and since March 1924 Asst. Engr. on design of pavements, Res. Engr. on construction of reinforced concrete arch bridge (\$20 000), grain terminal (\$175 000), barge terminal and railroad yards and dock (\$250 000), street and alley paving, sewer repair, and detailing reinforcing steel on \$1 000 000 viaduct. TT 6.6: SP 0.4: P 6.2: RC 3: D 2.—TT 10.1: SP 2.4: P 7.7: RC 3.5: D 3. Refers to W. N. Carey, G. W. Deibler, G. M. Garen, J. R. Johnston, J. M. Reardon, G. M. Shepard, S. B. Shepard.

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(11) MANSUR, EVERETT BROWN, 361 City Hall, Los Angeles, Cal. (Age 30. Born Bangor, Me.) 1923 B. S. in Civ. Eng., Univ. of Me. TT 4: P 4.—Summer 1918 Clerk, National Eng. Corporation, Portsmouth, N. H., furnishing supplies for housing project.—Summers 1919 and 1921 Draftsman with G. I. Mansur, Archt., Bangor, Me.—Summer 1920

and June 1923 Surveyor, I. M. Pierce Lumber Co., and (1923) Prentiss & Carlyle, Foresters.—July 1923 to Feb. 1924 Surveyor and Field Engr., New England Power Co., Worcester, Mass., laying out power-transmission lines and erecting towers. *TT 0.4: SP 0.2: P 0.2.*—March to July 1924 Computer, Southern California Edison Co., Los Angeles, Cal., calculations and structural designing. *TT 0.3: SP 0.1: P 0.2.*—Sept. 1924 to Jan. 1925 Draftsman, Public Service Dept., Los Angeles, laying out water lines. *TT 0.2: SP 0.2.*—Feb. 1925 Eng. Draftsman, Regional Planning Comm. of Los Angeles County, Cal., laying out highway plan. *TT 0.1: SP 0.1.*—March 1925 to June 1926 Jun. Civ. Engr., City Engr.'s office, Los Angeles, making cost estimates, studies and plans for street traffic. *TT 1.3: P 1.3.*—Aug. 1926 to Aug. 1927 Engr., Major Business Center Association, North Hill St. Extension Association, etc., on engineering studies, estimates, plans and statistical reports. *TT 1: P 1: RC 0.5: D 0.2.*—Aug. 1927 to date Asst. Planning Engr., City Planning Comm. of Los Angeles, field studies, plans, estimates and reports on traffic street plans, grade separation and city planning problems; Nov. 1928 to Feb. 1929 also Associate Engr., City of Fresno, Cal., on traffic plans. *TT 2.7: P 2.7: RC 1.3: D 0.8.*—*TT 10: SP 0.6: P 9.4: RC 1.8: D 1.* Refers to D. M. Baker, C. K. Bowen, M. Butler, W. J. Fox, S. A. Jubbs, J. M. Kemmerer, J. O. Marsh, F. T. Morse, J. W. Walters.

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(1) **MERCER, LESLIE BOYD**, Casilla de Correo 887, Buenos Aires, Argentina. (Age 28. Born Melbourne, Victoria, Australia.) 1925 B. C. E., Melbourne Univ. *TT 4: P 4.*—June 1924 to Feb. 1926 with Australian Cement, Ltd., Geelong, Australia, as Surveyor setting line and level for factory and Designer in reinforced concrete. *TT 1.7: P 1.7: D 1.7.*—Feb. 1926 to July 1927 Branch Mgr., S. Haunstrup & Co., Ltd., Sydney, Australia, on reinforced concrete construction, in charge of 600 000-bu. elevator. *TT 0.5: P 0.5: RC 0.5.*—Sept. 1927 to May 1928 with Jones Hettelsater Constr. Co., Kansas City, Mo., as Detail Designer and Estimator on concrete wheat elevators. *TT 0.7: P 0.7: D 0.7.*—June 1928 to date Structural Engr. with Henry Simon, Ltd., Cheadle Heath, Manchester, England, designing 3 000 000-bu. wheat elevator. *TT 1.9: P 1.9: RC 1.7: D 1.7.*—*TT 3.8: P 3.8: RC 2.2: D 4.1.* Refers to J. H. Butters, C. S. Harper, C. W. N. Sexton, H. M. Sherrard, T. H. Upton.

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(1) **MINEAR, VIRGIL LUTHER**, Santa Ana, El Salvador. (Age 38. Born Unionville, Mo.) B. S. in Gen. Sci., Utah Agri. Coll. 1923 B. S. in Civ. Eng., Univ. of Wis. *TT 4: P 4.*—1917–1919 Capt., Artillery, U. S. Army, in United States, France and Germany.—Aug. 1923 to Nov. 1925 with U. S. Reclamation Service, American Falls, Idaho, as Chf. of party on line and grade for new townsite, including streets, sidewalks, curbs, water supply, sewer, etc., Hydrographer, and Jun. Engr. on water-supply studies, American Falls Dam. *TT 2.2: P 2.2: RC 2.2.*—Dec. 1925 to April 1926 Hydrographer, Imperial Irrigation Dist., Wistaria Station. *TT 0.6: P 0.6: RC 0.6.*—Sept. 1926 to April 1928 with United Fruit Co., Pto Castilla, Honduras, as Field Engr. on instrument work for irrigation drainage, railroad and river-control works, Hydrographer on field and office studies for divisional water supply for irrigation, and Project Engr. on location and construction of irrigation project, reconnaissance of 500-h. p. hydro-electric plant, exploration and base-line surveys. *TT 1.7: P 1.7: RC 1.7.*—March 1929 to date with R. W. Hebard & Co., El Salvador, as Locating Engr. on 66 000-volt transmission line (67 k.m. long) and diversion tunnel (2 175 m. long) for high-head hydro-electric plant, and Supt. of Constr. on location and construction of national highways, in charge of work in Occidental Zone of Republic. *TT 1: P 1: RC 1: D 1.*—*TT 9.5: P 9.5: RC 5.5: D 1.* Refers to F. A. Banks, M. E. Gilmore, W. F. Wirth. (Applies in accordance with Sec. 1, Art. I, of the By-Laws.)

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(1) **MORAN, ANTHONY THOMAS**, 73 West Ninety-Second St., New York City. (Age 51. Born Shenandoah, Pa.) Student, Bucknell Univ. (1899 to 1900) and special course shaft sinking, Columbia Univ. (1904 to 1908). *TT 0.5: P 0.5.*—1897 to 1899 Rodman, Lehigh Valley Coal Co., Centralia, Pa. *TT 0.8: SP 0.8.*—1900 to 1904 Leveler and Transmitter, Metropolitan Street Ry. Co., New York City. *TT 2: SP 2.*—1905 to 1907 on construction of Steinway tunnel, 42d St. and East River, one year as Engr., then as Supt. for Degnon Co., Contrs. *TT 1.5: SP 0.5: P 1: RC 1.*—1907 to 1908 Supt. on shaft construction Hudson Company's Ferry Roadway Shaft, Pennsylvania R. R. Station, Jersey City, N. J. *TT 1: P 1: RC 1.*—1908 to 1909 Contr., mine shaft, Philadelphia and Reading Coal Co., Shenandoah, Pa., Shenandoah City Colliery. *TT 1: P 1: RC 1.*—1909 to 1910 Sub-Contractor, New York Barge Canal, Medina to Gosport, N. Y. *TT 1: P 1: RC 1.*—1910 to 1916 Supt. and Engr., J. F. Shanley Co., Newark, N. J., general contracting, railroad bridges and highways. *TT 6: P 6: RC 6.*—1916 to 1917 Contractor, New York State Highway, con-

structing highways and county roads in Dutchess County, N. Y. *TT 1: P 1: RC 1.*—1917 to 1918 Asst. Supt. for James Stewart, Contr., ordnance plant, Pig Point, Va. *TT 1: P 1: RC 1.*—1918 to 1919 Supt., Stillman-Delehanty-Ferris Co., Contrs., Jersey City, N. J., Newark turnpike, Hackensack River to Harrison. *TT 1: P 1: RC 1.*—1919 to 1925 Secy. and Treas., Monroe Paving Co., Shamokin, Pa., operating stone quarry and constructing highways, also, Contr., mine tunnel and slope from Susquehanna Colliery Co. *TT 6: P 6: RC 6.*—1925 to 1926 Borough Engr., Shenandoah, Pa. *TT 1: P 1: RC 1.*—1926 to date Engr., Empire City Subway Co., New York City, on design and investigation. *TT 2.5: P 2.5: RC 2.5.*—*TT 26.3: SP 3.3: P 2.3: RC 22.5.* Refers to A. R. Archer, St. J. Clarke, J. V. Davies, F. W. Gardiner, C. I. Walker.

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(1) MOREHOUSE, STANLEY EMBLETON, 631 Carlton Road, Westfield, N. J. (Age 26. Born Brooklyn, N. Y.) 1924 B. S., Rutgers Coll. *TT 4: P 4.*—June to Nov. 1924 Draftsman, Central R. R. of New Jersey, checking track layouts, designing concrete foundations, etc. *TT 0.2: SP 0.2.*—Nov. 1924 to May 1925 Rodman, Pennsylvania R. R., inspection and instrument work on timber-trestle and on plate-girder highway-bridge construction. *TT 0.3: SP 0.3.*—June 1925 to date Job Accountant and Asst. Supt., Turner Constr. Co., New York City, in charge of lines and grades on part of James River Bridge Project, also of masonry and sub-contracts on Syracuse (N. Y.) Herald Bldg., U. S. Gypsum Plant, East Chicago, Ind., and Western Electric Cable Plant Addition, Chicago, Ill. *TT 3.6: SP 1.2: P 2.4: RC 2.*—*TT 8.1: SP 1.7: P 6.4: RC 2.* Refers to E. K. Abberley, J. P. H. Perry, H. B. Pope, H. W. Roberts, E. H. Rockwell.

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(13) MOTT, ALBERT GIFFORD, 504 State Bldg., San Francisco, Cal. (Age 41. Born Fertile, Minn.) 1908 B. A. and 1909 E. E., Leland Stanford, Jr. Univ. *TT 4: P 4.*—1909 to 1921 with Southern Pacific Co., as follows: 1909 to 1910 Draftsman and (about 7 months) Head Draftsman, Maintenance of Way Dept., Coast Division, in charge of drafting (under Div. Engr.); 1910 to 1914 student in railway operation, on work in principal operating departments; 1914 to 1921 Asst. Engr., 6 years with Coast Div., on maintenance, design and construction, being in charge of tunnel reconstruction, bridge construction and rebalasting, etc., also of design and construction of railroad facilities for Camp Fremont, and of divisional reports for Interstate Commerce Comm., and about seven months in general office, San Francisco, checking estimates and plans for improvement appropriations. *TT 9.4: SP 1.7: P 7.7: RC 3: D 2.*—1921 to date with California R. R. Comm., until 1923 as Asst. Engr., Transportation Div., on engineering investigations, 1923 to 1926 Transportation Engr., in charge of engineering work for regulation of transportation utilities in State, involving investigations of safety of structures and operation, and of operation in connection with rate proceedings, valuations, etc., and since 1926 Chf. Engr., in general charge of engineering for regulation of public utilities in State and of analyses of operations relating to safety and rate proceedings, preparation of valuations and special studies for presentation before Interstate Commerce Comm. *TT 9.1: P 9.1: RC 6.3: D 1.*—*TT 22.5: SP 1.7: P 20.8: RC 9.3: D 3.* Refers to N. A. Bowers, N. R. Ellis, C. D. Marx, E. G. Sheibley, T. E. Stanton, Jr., A. J. Wagner, F. G. White.

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(8) MURNER, HERBERT KENNETH, 2015 Tribune Tower, Chicago, Ill. (Age 28. Born Olivet, S. Dak.) 1924 B. S. in C. E., Armour Inst. Tech. *TT 4: P 4.*—June 1924 to May 1925 Jun. San. Engr., Wallace & Tiernan Co., Inc., Chicago, Ill. *TT 0.5: SP 0.5.*—May 1925 to Feb. 1927 Draftsman, Biscayne Eng. Co., Miami, Fla., later in charge of drafting room; made computations and designs for municipal layouts, harbor developments and drainage improvements. *TT 1.8: P 1.8: RC 1: D 1.*—Feb. to June 1927 with Bureau of Surveys, Miami, Fla., as Engr. on establishment of city street grades and monument lines. *TT 0.3: P 0.3.*—Aug. 1927 to date with V. D. Simons, Engrs., Inc., Chicago, Ill., as Draftsman and Engr. on structural detail and design, equipment layout and structural and equipment cost estimates for paper-mill and power-plant developments. *TT 2.7: P 2.7: RC 2: D 2.*—*TT 9.3: SP 0.5: P 8.8: RC 3: D 3.* Refers to W. E. Beach, L. H. Enslow, A. E. Gorman, F. G. Merkel, J. Nicolet, A. N. Wardle, G. N. Wheat.

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(15) NUNENMACHER, JOSEPH FRANK, 1600 Dallas National Bank Bldg., Dallas, Tex. (Age 26. Born New Orleans, La.) 1925 B. E., Tulane Univ. *TT 4: P 4.*—June-Aug. 1925 Surveyor with S. A. Cologne's Sons, New Orleans, La., laying out and plotting subdivisions on map (2 months) and with Merrill Bernard, Crowley, La., on rice irrigation project, being in charge of party and plotting (1 month). *TT 0.3: P 0.3.*—Sept. 1925 to March 1926 Jun. Engr., U. S. Coast and Geodetic Survey. *TT 0.5: P 0.5.*—March to Aug. 1926 Detailer

of reinforcing steel, Kalman Steel Co., Atlanta, Ga. *TT 0.4: P 0.4.*—Aug. 1926 to date Engr. and Estimator, Henger & Chambers Co., Dallas, Tex. *TT 3.6: P 3.6: RC 1.6: D 0.3.*—*TT 8.8: P 8.8: RC 1.6: D 0.3.* Refers to F. W. Chappell, D. Derickson, A. M. Fromherz, W. W. Means, J. L. O'Hearn, E. Sigler.

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(3) OLIVER, ELMER LEWIS, 52 City Hall, Rochester, N. Y. (Age 36. Born Rochester, N. Y.) 1921 B. S. in C. E., Mass. Inst. Tech. *TT 4: P 4.*—Sept. 1912 to July 1915 Cooperative course in Civ. Eng., Mechanics Inst., Rochester, N. Y.—May 1917 to April 1919 with U. S. Army, Coast Artillery Corps, as Private, Corporal, Sergeant, 2d Lieut., Graduate Coast Artillery School, Fortress Monroe, Va.; Observer and Instructor in surveying and Mathematics. *TT 1: SP 0.6: P 0.4: RC 0.4.*—Sept. 1912 to Jan. 1914 and Oct. 1914 to July 1915 (while student) and July 1915 to date (except May 1917 to April 1919 with U. S. Army and Oct. 1919 to June 1921 student) with Dept. of Eng., City of Rochester, N. Y., until July 1915 (while student) as Chairman and Rodman on survey and improvement parties; July 1915 to July 1917 Transmittan on tunnel construction, in charge of party on location survey and Asst. to Engr. in charge on alignment maps, profiles, pipe schedules, estimates, etc. for construction of 36-in. conduit for water supply; May to Oct. 1919 and July 1921 to May 1923 Asst. to Office Engr. on sewer design and local improvement estimates; May 1923 to Feb. 1926 Asst. to Deputy City Engr. on local improvements, design and construction; Feb. 1926 to May 1929 Office Engr. in charge of design of sewer systems, pavements and of plans and estimates for all local improvements; since May 1929 Engr. in charge of Local Improvement Div., Bureau of Design and Constr., Dept. of Public Works. *TT 9.6: SP 1.5: P 8.1: RC 6.4: D 4.5.*—*TT 14.6: SP 2.1: P 12.5: RC 6.8: D 4.7.* Refers to H. W. Baker, E. A. Fisher, H. L. Howe, I. E. Matthews, C. A. Poole, J. F. Skinner, A. L. Vedder.

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(10) OXFORD, JOHN W., Jr., Melville, La. (Age 20. Born Orrville, Ala.) 1929 B. S. in Civ. Eng., Univ. of Ala. *TT 4: P 4.*—June 1929 to date Inspector, U. S. Engr. Dept., Melville, La., acting as Instrumentman, Chf. of Party, Draftsman and Computer, on surveys and levee location for Atchafalaya Spillway. *TT 0.4: SP 0.4.*—*TT 4.4: SP 0.4: P 4.* Refers to G. J. Davis, Jr., S. C. Houser, C. E. McCashin.

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(5) PARSONS, DOUGLAS EUGENE, U. S. Bureau of Standards, Washington, D. C. (Age 35. Born Marion, Iowa.) 1917 B. A., and 1922 M. in Civ. Eng., Cornell Coll., Iowa.—June 1912 to Sept. 1913 First Asst. to County Engr., Linn County, Iowa, acting as Instrumentman, Draftsman and Computer on land surveys, highway and bridge location and construction, sewage and drainage projects. *TT 0.6: SP 0.6.*—Aug. 1917 to April 1919 2d Lieut., U. S. Army, being Reconnaissance Officer, 314th Trench Mortar Battery, 89th Div., Camp Funston, Kans., and A. E. F. *TT 0.9: SP 0.9.*—May 1919 to Dec. 1923 First Asst. to Chf. Engr., Iowa Ry. & Light Co., Cedar Rapids, Iowa, being Res. Engr. on railroad construction, Chf. of Party on surveys for transmission lines, trackwork layouts and hydro-electric developments; prepared plans, specifications and estimates for track layouts, bridges and hydro-power plants. *TT 4.3: SP 0.3: P 4: RC 2.5: D 0.5.*—Dec. 1923 to date Associate Engr. and Engr., U. S. Bureau of Standards, Washington, D. C., in responsible charge of research and investigations for structural engineering problems in concrete, reinforced concrete and other masonry construction, also theoretical investigations. *TT 6.3: P 6.3: RC 4.3: D 2.*—*TT 12.1: SP 1.8: P 10.3: RC 6.8: D 2.5.* Refers to G. Conahy, C. C. Fishburn, E. F. Kelley, W. A. Slater, J. D. Wardle, C. A. Wright.

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(10) PORTER, ROBERT MARVIN, 10 Hook Bldg., Columbia, S. C. (Age 35. Born Marion, S. C.) Sept. 1913 to March 1915 student in Eng., Univ. of South Carolina. *TT 0.5: P 0.5.*—1911 to Sept. 1913 Chainman, Rodman, Inspector, Instrumentman and Draftsman, and March 1915 to June 1917 Instrumentman, Draftsman and Chf. of Party, with J. M. Johnson, Marion, S. C. *TT 2.8: SP 2.3: P 0.5: RC 0.5.*—June 1917 to Aug. 1919 with U. S. Army, until Aug. 1917 as student at Reserve Officers' Training Camp, Ft. Oglethorpe, Ga., then with 318th Machine Gun Battalion at Camp Jackson, S. C., and with A. E. F., as 2d Lieut. and (after Feb. 1918) 1st Lieut.—Aug. 1919 to May 1923 Engr. and Surveyor with Johnson & Roberts, Marion. *TT 2.9: SP 0.9: P 2: RC 1: D 1.*—June 1923 to Aug. 1926 Chf. of Survey Party and Res. Engr., and Aug. to Nov. 1928 Senior Res. Engr., Columbia Dist., South Carolina Highway Dept. *TT 3.4: P 3.4: RC 3.4.*—Aug. 1926 to July 1928 City Engr., Columbia, S. C. *TT 1.9: P 1.9: D 1.9.*—Dec. 1928 to Oct. 1929 Sales Engr., Columbia (S. C.) Clay Co. *TT 0.9: P 0.9: D 0.9.*—Oct. 1929 to date Engr., Richland County, S. C., on paved road work. *TT 0.5: P 0.5: D 0.5.*—*TT 15: SP 3.2: P 9.8: RC 5: D 4.3.* Refers to S. C. Dreyfus, J. M. Johnson, J. W. Martin, F. H. Murray, W. E. Rowe, F. P. Smith, G. S. Ward, C. C. Wilson.

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(4) REEVES, GUSTAVE FELIX, 6215 Catherine St., Philadelphia, Pa. (Age 28. Born Budapest, Hungary.) 1914 B. S. of Civ. Eng., Royal Tech. Univ., Joseph, Budapest. *TT 4: P 4.*—Aug. 1914–Oct. 1918 1st Lieut., Austro-Hungarian Army, heavy artillery, Reg. No. 6, Budapest, Hungary; Commander and in charge of construction of heavy coast defense battery, Cattaro, Dalmatia. *TT 0.7: P 0.7: RC 0.7.*—Oct. 1918–April 1920 unemployed.—May 1920 to Jan. 1921 Eng. Asst., Zagorka Constr. Industrial Corporation, Bedekovchina, Yougoslavia, in charge of design and construction of repair shop, steam-electric power plant, viaduct, cableway, second story of building and of design of smokestack. *TT 0.7: P 0.7: RC 0.7.*—Jan.–June 1921 Engr., Aranjós & Popovich Constr. Co., Gajevo-ul. 10, Zagreb, Yougoslavia, estimating and in charge of design of three 4-story apartment houses and reinforced concrete floors for sixteen 4-story apartment houses. *TT 0.5: P 0.5: RC 0.5.*—July 1921–Sept. 1922 with Yougoslav Ministerium of Constructions, Belgrad, Yougoslavia, as Engr. Grade IV, Constr. Dept., Kragujevac, in charge of design and supervision of construction of highway bridges, and Engr. Grade II, Highway Dept., Uzice, in charge of highway location and design. *TT 1.3: P 1.3: RC 1.3.*—Oct. 1922 to Aug. 1923 Asst. Constr. Supt. with Niklo Plavcich, Bldg. Contr., Zagreb, Yougoslavia, on Vardiste-Sargan railway, in charge of construction of tunnels, cuts, cableways (for material transport), culverts, design of retaining walls, procuring timber supply, etc. *TT 0.9: P 0.9: RC 0.9.*—March 1924–Feb. 1925 Designer, State Highway Dept. of Pennsylvania, Pittsburgh, designing and checking plans of highways, short-span concrete arch bridges and culverts, estimating earthwork and masonry. *TT 1: P 1: D 1.*—March to Dec. 1925 Detailer, American Bridge Co., Ambridge, Pa., structural steel detailing on suspension, truss and plate-girder bridges, mill and office buildings. *TT 0.8: P 0.8: D 0.8.*—April to July 1926 Structural Designer, Elec. Bond & Share Co., New York City, designing and estimating structural steel and reinforced concrete members of two steam electric power plants and a telephone building. *TT 0.3: P 0.3: D 0.3.*—July 1926 to Feb. 1929 Structural Designer, New York Central R. R. Co., New York City, on design of Park Ave. viaduct structure and of hung passageway from New York Central Bldg. to Grand Central Terminal, in charge of design of stairway at south end of passageway, checking architectural and structural design plans and contractor's drawings and estimates of New York Central Bldg. *TT 2.6: P 2.6: D 2.6.*—Feb. 1929 to date Structural Designer, United Engrs. & Constrs., Inc., Philadelphia, Pa., checking and on design of Pennsylvania R. R. bridge (reinforced concrete arch) over Schuylkill River, of viaduct E and W, West Philadelphia Station, Express Agency Bldg., etc., estimating of viaduct structure, etc. *TT 2.2: P 2.2: D 2.2.*—*TT 15: P 15: RC 4.1: D 6.9.* Refers to H. H. Aroyan, J. W. Jones, C. D. Kaminsky, T. B. Rights, M. Silverman.

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(1) RIVERO Y MAHY, NICOLAS MARIANO, Libertad 14, Ciego de Avila, Cuba. (Age 34. Born Havana, Cuba.) 1921 C. E., Univ. of Havana.—Dec. 1916 to July 1922 with Dept. of Public Works, Bureau of Water & Sewers, Havana, Cuba, until July 1921 as Instrumentman, then Asst. Engr. 4th Class, and after Dec. 1921 Asst. Engr. 3d class. *TT 3.3: SP 2.3: P 1.*—July 1922 to Feb. 1924 and April 1925 to June 1926 Civ. Engr. in charge of surveying and railroad construction, and Feb. 1924 to April 1925 Asst. Directing Engr. on construction, Central Estrada Palma, Yara, Oriente. *TT 3.9: P 3.9: RC 3.9.*—June 1926 to July 1927 private work on his sugar-cane plantation at Central Estrada Palma, Yara, Oriente.—July 1927 to date member of firm, Marinello, Rojas & Rivero, Engrs. and Contrs., Havana, Cuba, on construction; at present has contract for concrete overhead crossing on Central Highway at Ciego de Avila. *TT 2.3: P 2.3: RC 2.3.*—*TT 10: SP 2.3: P 7.7: RC 6.7.* Refers to E. J. Chibas, M. A. Corrales, J. A. Cosculluela y Barreras, F. J. Gaston, M. Lora y Romero, J. J. Manzanilla y Carbonell, A. R. Olds, J. D. Real y Gaillard, R. V. Sorondo, J. R. Villalon, M. Villa Rivera, E. R. Williams.

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(1) ROGDE, SIGURD OLAI, 134–59 Two Hundred Thirty-Third St., Laurelton, N. Y. (Age 35. Born Aafjord, Norway.) 1919 C. E., Cornell Univ. *TT 4: P 4.*—July to Sept. 1914 and July 1915 to Jan. 1916 Civ. Engr. with Jens Skjerdal, Cons. Engr., Bergen, Norway, acting as Surveyor in charge of surveying of estates and surveying and estimates of water-power developments. *TT 0.6: SP 0.1: P 0.5: RC 0.5: D 0.2.*—Nov. 1917 to Jan. 1918 Designer, Gunvald Aus Co., New York City, on office buildings. *TT 0.2: P 0.2: D 0.2.*—June to Oct. 1918 Structural Engr., Harris Bros. Co., Chicago, Ill., in charge of engineering and construction in structural steel fabricating shop, fabricating steel frames for industrial buildings.—July 1919 to Feb. 1923 Civ. Engr., Elec. Bond & Share Co., New York City, on design of hydro-electric power plants, etc., and in charge of design of steam-power stations, also supervised construction. *TT 3.5: P 3.5: RC 0.5: D 3.*—Feb. 1923 to date Designing Engr.,

New York City, until Aug. 1924 with International Paper Co., on design of paper mills, then with A. E. Wheeler, on design and in charge of design of copper smelters and refineries. *TT 7.2: P 7.2: RC 3: D 4.—TT 15.5: SP 0.1: P 15.4: RC 4: D 7.4.* Refers to A. P. Andersen, O. A. Arnold, K. Berle, A. I. Helm, W. S. Merrill.

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(11) **ROSSON, MERWIN**, 418 Orange Ave., Huntington Beach, Cal. (Age 35. Born Creston, Iowa.) Student, Wilson Eng. School.—Jan.—Sept. 1917 Rodman and Chairman, Excelsior Gold Min. Co., Placer County, Cal. *TT 0.3: SP 0.3.*—1917 to 1919 in France with 101st Field Signal Battalion, A. E. F. (Headquarters Co., 102d Infantry Signal Sec., 26th Div.)—July 1919—Dec. 1920 Rodman, Chairman and Levelman, U. S. Geological Survey, on contour map of Yosemite National Park, Cal. *TT 0.7: SP 0.7.*—June 1921—Oct. 1922 Chf. of Party and Draftsman on bridge and highway construction and maintenance, highway location, Res. Inspector on Sacramento River bridge at Isleton, surveys, office computations, etc., under County Surveyor, Sacramento County, Cal. *TT 1.4: P 1.4: RC 1.4.*—Nov. 1922—April 1926 with City of Santa Ana, Cal., as Asst. to City Engr., Constr. Engr. on Santa Ana outfall sewer, Field and Office Engr. on paving, sewage, ornamental lights, drainage surveys and construction, plans, specifications, etc. *TT 3.5: P 3.5: RC 3.5: D 2.*—May 1926 to date with City of Huntington Beach, Cal., as City Engr. and Street Supt., on design and construction, storm drains, sewage disposal, oil field waste-water disposal system, ocean-front improvements, pleasure-pier reconstruction, investigation, reports, design, computations and construction of 500-ft. extension to pier, paving programs, ornamental street lighting systems, etc.; appointed member of Orange County Planning Comm. *TT 4: P 4: RC 4: D 4.—TT 10: SP 1.1: P 8.9: RC 8.9: D 6.* Refers to R. L. Anderson, P. Bailey, W. E. Barney, A. A. Beard, T. Berry, F. S. Currie, N. H. Neff, A. R. Norcross, A. J. Smith, C. A. Smith.

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(1) **ROUNDS, HAROLD PERCIVAL**, 59 West Eighth St., New York City. (Age 34. Born Dexter, N. Y.) 1920 B. S. in C. E., Union Coll., Schenectady, N. Y. *TT 4: P 4.*—June 1920 to April 1921 Special Apprentice, American Locomotive Co., Schenectady, N. Y., computing and shop work. *TT 0.4: SP 0.4.*—April 1921 to March 1923 Steel Draftsman detailing structural steel, until Feb. 1923 with Hay Foundry & Iron Works, Newark, N. J., then with Standard Oil Co. of New Jersey, Bayway, N. J. *TT 0.9: SP 0.9.*—March to July 1923 Structural Designer, Dwight P. Robinson & Co., New York City, on steel structures. *TT 0.2: SP 0.2.*—July 1923 to July 1924 Draftsman, Wilputte Coke Oven Corporation, New York City, detailing structural steel. *TT 0.5: SP 0.5.*—July 1924 to date Structural Designer and Estimator with Ford, Bacon & Davis, New York City, designing and estimating structural steel and concrete on foundations and various structures. *TT 5.2: P 5.2: RC 3.—TT 11.2: SP 2: P 9.2: RC 3.* Refers to H. B. Cleveland, A. C. Davids, F. P. McKibben, A. H. Newman, G. H. Sager, Jr., F. J. Trelease.

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(6) **ROWLEY, REGINALD**, 1422 Frick Bldg., Pittsburgh, Pa. (Age 30. Born Stoke-on-Trent, Staffordshire, England.) 1926 B. S. in Bldg. Constr., Carnegie Inst. Tech *TT 4: P 4.*—May 1916 to Sept. 1920 with Riverside Bridge Co., Martins Ferry, Ohio, Blueprint Boy, etc. to Structural Detailer. *TT 2.2: SP 2.2.*—Sept. 1920 to June 1926 student. June 1926 to date Detailer, Checker, Estimator and Designer with American Bridge Co., Pittsburgh, Pa.; since Oct. 1925 (evenings) also Instructor of Structural Drafting, Carnegie Inst. of Technology. *TT 2.6: SP 1.1: P 1.5: D 0.5.—TT 3.8: SP 3.3: P 5.5: D 0.5.* Refers to M. Burden, C. G. Dunnells, F. S. Merrill, T. D. Mylrea.

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(10) **RUSSELL, WILLIAM ALTON**, Mobile County Highway Dept., Mobile, Ala. (Age 32. Born Grand Rapids, Minn.) Licensed Prof. Engr., State of Florida. 1923 B. Sc. in Civ. Eng., Harvard Univ. *TT 4: P 4.*—April 1917 to June 1918 Rodman and Chairman for County Engr., Grand Rapids, Minn., on highway and drainage work. *TT 0.6: SP 0.6.*—July 1918 to Jan. 1919 with 606th Engrs., U. S. Army, as Rodman and Transitman, Camp Humphreys, Va., on topographic, railroad, highway and general construction work. *TT 0.3: SP 0.3.*—Jan. to Sept. 1919 Transitman and Chf. of Party for P. C. Warner, County Engr., Grand Rapids, sectional subdivision and drainage work. *TT 0.3: SP 0.3.*—Sept. 1919 to June 1923 Student, Univ. of Minn.—June to Sept. 1923 Jun. Engr., Holland Tunnels, New York City, compressed air caisson and tunneling, precise triangulation. *TT 0.3: P 0.3.*—Sept. 1923 to Nov. 1924 Locating Engr., Junta Central de Caminos, Panama, on location and design of national highway project (\$4 000 000). *TT 1.1: P 1.1: RC 1.1: D 0.5.*—Nov. 1924 to Jan. 1927 in private practice at Sarasota, Fla., bridge, highway and municipal work. *TT 2.1: P 2.1: RC 2.1: D 2.1.*—Jan. 1927 to Sept. 1928 Chf. Bridge Engr., Harrison County, Miss., on bridge design and construction of highway project (\$3 000 000), fixed and movable bridges. *TT 1.6: P 1.6: RC 1.6: D 1.6.*—Sept. 1928 to date Chf. Bridge

Engr., Mobile, County Highway Dept., bridge design and construction on highway project (\$5 000 000), fixed and movable bridges. *TT 1.7: P 1.7: RC 1.7: D 1.7.—TT 12: SP 1.2: P 11.8: RC 6.4: D 5.8.* Refers to J. P. Ewin, H. L. Fisher, A. Haertlein, W. S. Hawkins, J. R. Peavy, L. C. Smith, T. A. Smith, R. K. West.

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(12) RYAN, CHARLES PATRICK, 909 South Third St., Tacoma, Wash. (Age 46. Born Gardner, Mass.) June 1900 to June 1905 Rodman, Instrumentman and Chf. of Party with E. M. Lee, C. E. Gardner, Mass.; subdivision work, street railway location and construction, Massachusetts State Highway Comm., Boston & Maine R. R., City water supply, sewage and drainage, New England Tel. & Tel. Co. *TT 2.5: P 2.5.*—July 1905 to July 1908 Oceanographer, Signal Corps, U. S. Army, Cablesip *Burnside*, Seattle, Wash., laying United States-Alaskan military telegraph cable. *TT 2.5: SP 0.5: P 2.*—Sept. 1908 to Oct. 1912 on fire-protection engineering, Tacoma, Wash., under National Board of Underwriters in co-operation with Fire Dept. *TT 4: P 4: RC 4.*—Nov. 1912 to Dec. 1914 private engineering, surveying, exploration, railroad location, National Rys. of Mexico. *TT 2: P 2.*—Jan. 1915 to Aug. 1916 Asst. to Chf. Engr., San Joaquin & Eastern R. R., Pacific Light & Power Co. of California, on location, construction and maintenance. *TT 1.5: P 1.5.*—1916 to April 1917 Asst. Testing Engr. with Charles E. Neuhall, Pettebury and Neuhall Testing Laboratory, Seattle, Wash., during construction of American Nitrogen Plant, LaGrande, Wash. *TT 0.5: P 0.5: D 0.5.*—April 1917 to May 1919 with Corps of Engrs., U. S. Army, on construction of supply bases, with A. E. F. in France, railroad yards, terminals, docks, warehouses, water supply, cold-storage plants, housing and fire protection. *TT 2: P 2.*—July 1919 to Oct. 1921 Chf. Engr., Fire Protection, Camp Lewis, Wash. *TT 2.2: P 2.2: RC 2.2: D 2.2.*—Jan. 1922 to Jan. 1923 Asst. Field Engr., in charge of geological tests, surveys for dam and impounding basin, Cushman hydro-electric project, Tacoma. *TT 1: P 1.*—Jan. to Sept. 1923 private engineering, surveying, logging operations, railways, bridges and docks. *TT 0.7: P 0.7: RC 0.7: D 0.7.*—Sept. 1923 to date with City of Tacoma, supervising field operations, surveying and inspecting construction of bridges, paving, grading, sewerage and drainage, harbor improvements and testing materials, until June 1928 as Asst. Field Engr. (1 year) and Field Engr., Dept. of Public Works, and since then Asst. City Engr. *TT 6.6: P 6.6: RC 6.6.—TT 25.5: SP 3: P 22.5: RC 13.5: D 3.4.* Refers to O. A. Abelson, C. D. Forsbeck, O. H. Hallberg, C. E. Putnam, V. R. Rathbun, J. L. Stannard.

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(1) SANDO, HARRY WILSON, Obley St., Cumnock, New South Wales, Australia. (Age 27. Born Bathurst, N. S. W., Australia.) Licensed Surveyor, Australia. Shire and Municipal Engr., New South Wales.—Aug. 1920 to Oct. 1924 with A. J. Blakeway, Surveyor and Civ. Engr., Adelaide, South Australia, on land surveys, over 2 years in charge of field parties and responsible for work carried out; signed plans, etc. *TT 2.7: SP 1.5: P 1.2: D 0.4.*—Oct. 1924 to July 1925 with British Solomon Island Govt., on similar work. *TT 0.7: SP 0.7.*—Aug. to Dec. 1925 Surveyor and Draftsman with S. L. Luker, Cons. Engr., Sydney, on surveys, plans and specifications for road schemes. *TT 0.4: P 0.4: D 0.2.*—Jan. 1926 to Aug. 1927 Asst. Engr., Cobbora Shire Council, Jeurie, New South Wales, on surveys, plans, specifications and estimates for road and bridge works (approx. £80 000). *TT 1.6: P 1.6: D 1.1.*—Aug. 1927 to date Shire Engr., Amaroo Shire Council, Cumnock, New South Wales, in charge of plans, specifications and estimates, supervising construction of roads and bridges (£30 000 annually). *TT 2.7: P 2.7: RC 2.7: D 0.6.—TT 8.1: SP 1.5: P 6.6: RC 2.7: D 2.3.* Refers to C. F. Blain, L. B. Watson. (Applies in accordance with Sec. 1, Art. I, of the By-Laws.)

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(12) SAWHILL, DONALD, 4718 South Reade St., Tacoma, Wash. (Age 40. Born Missoula, Mont.) Sept. 1909 to Feb. 1914 Instrumentman, U. S. Reclamation Service, Flathead Project, Canadian Northern Ry. and Chicago, Milwaukee & St. Paul Ry., on location and construction. *TT 2.2: SP 2.2.*—March 1914 to April 1916 Asst. Surveyor, U. S. Forest Service. *TT 1: SP 1.*—May 1916 to Sept. 1917 Surveyor, U. S. Land Office. *TT 1.4: P 1.4.*—Oct. 1917 to Dec. 1918 2d Lieut., Infantry, U. S. Army.—Jan. 1919 to June 1928 Deputy Engr., on roads, bridges and wharves, and July 1928 to date Asst. County Engr., Pierce County, Wash. *TT 12.2: P 12.2: RC 8.7: D 5.7.—TT 16.8: SP 3.2: P 13.6: RC 8.7: D 5.7.* Refers to J. A. Arntson, F. C. Dunham, C. D. Forsbeck, O. H. Hallberg, C. E. Putnam, W. J. Roberts.

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(2) SAWYER, RALPH ELDON, R. F. D. No. 4, Gorham, Me. (Age 45. Born Portland, Me.) 1908 B. A., Harvard Coll.; 1910 to 1912 (1½ years) graduate student, Harvard Univ. *TT 3: P 3.*—June 1911 to Feb. 1913 Geologist with Sawyer & Moulton, Civ. Engrs.,

examining dam sites, foundations for bridges and buildings, mines and prospects, hydraulic experimentation (chemical methods of stream flow). *TT 1.6: P 1.6: RC 1.5.*—May 1913 to Jan. 1914 Chemist, Lord Bros., Portland, Me., by-products of fish waste. *TT 0.7: P 0.7: RC 0.7.*—Nov. 1916 to Jan. 1917 Surveyor, South Porto Rico Sugar Co., topographic surveying and map revision. *TT 0.2: P 0.2.*—May 1917 to April 1919 with U. S. Army, as Instructor in topography; Purchasing Agent and Supply Officer, Constr. Div., Quartermaster Corps; Technical Adviser to Board revising methods of supply and accounting; Inspector, auditing accounts of and instructing Constructing Quartermasters and Camp Utilities Officers; also (since war) Instructor in topography, gunnery and artillery at training camp, being Major, Field Artillery Reserve Corps. *TT 2: P 2: RC 2.*—April to Sept. 1925 Asst. Engr., Portland Water Dist., in charge of dredging trench and laying pipe line (diameter 5 ft.) under water. *TT 0.5: P 0.5: RC 0.5.*—Oct. 1925 to Jan. 1926 Res. Engr., Maine State Highway Comm., building concrete bridge. *TT 0.3: P 0.3: RC 0.3.*—Sept. 1926 to May 1927 Investigator of industrial and financial condition in towns for Beyer & Small, Bankers. *TT 0.7: P 0.7: RC 0.7.*—May to Dec. 1927 Chemist, investigating bleaching and cleansing materials, also Plant Engr., W. S. Libbey Co., blanket mill; work included checking designs for bridge, designing dye house roof, layout of railroad sidings, etc. *TT 0.7: P 0.7: RC 0.7: D 0.2.*—Jan. 1928 to June 1929 in private practice as Min. and Hydr. Engr., examining mines in Colorado and studying underground water conditions for various water-works in New England. *TT 1.5: P 1.5: RC 1.5.*—Also at various times (total 1 year) on work including investigating project for electric tin smelter and refinery and one for a Portland Cement mill, teaching, etc. *TT 1: P 1.*—June 1929 to date Res. Engr., Sanders Eng. Co., Contrs., building earth dam. *TT 0.8: P 0.8: RC 0.8.*—*TT 13: P 13: RC 8.7: D 0.2.* Refers to F. A. Barbour, L. V. Branch, T. Crane, G. L. Freeman, R. F. Olds, A. P. Richmond, Jr.

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(1) SILVERMAN, DAVID, 629 West One Hundred Seventieth St., New York City. (Age 23. Born Chicago, Ill.) 1927 B. S., Mass. Inst. Tech. *TT 4: P 4.*—June to Sept. 1927 Eng. Asst., Board of Transportation, New York City, on surveys and topographical drafting. *TT 0.1: SP 0.1.*—Sept. 1927 to Feb. 1928 Jun. Engr., Pumping Station Div., Chicago, Ill., on pumping-station construction. *TT 0.3: SP 0.1: P 0.2.*—Feb. to March 1928 and Aug. to Oct. 1929 Substitute Teacher, Crane Coll., Chicago, teaching engineering, etc.—March to Aug. 1928 Designer with L. F. Harza, Chicago, on dams, power houses, retaining walls, etc. *TT 0.5: P 0.5: D 0.4.*—Aug. 1928 to Feb. 1929 Designer and Detailer, Barton Steel Co. (Concrete Bar Co.), industrial, apartment and store buildings. *TT 0.5: P 0.5: RC 0.2: D 0.5.*—Feb. to Aug. 1929 Checker, Universal Oil Products, Chicago. *TT 0.5: P 0.5: RC 0.2: D 0.5.*—Nov. 1929 to date Designer with Gibbs & Hill, New York City. *TT 0.5: P 0.5: D 0.5.*—*TT 6.4: SP 0.2: P 6.2: RC 0.4: D 1.9.* Refers to H. K. Barrows, W. M. Fife.

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(10) SIMINGTON, ARMIENUS WILMET, Bryson City, N. C. (Age 48. Born Mansfield, Ont., Canada.) Completed courses in Surveying, Mapping and Civ. Eng., International Correspondence Schools. 2 years student in geology, Univ. of Chicago.—1903 to 1906 Apprenticeship to R. S. Pelly, Surveyor, Armstrong, B. C., Canada. *TT 1.5: SP 1.5.*—1906 to 1907 Draftsman, Grand Trunk Pacific R. R. *TT 0.5: SP 0.5.*—1907 Instrumentman, Stave Lake Light & Power Co., instrument and office work on dam construction (about 4 months) and City of New Westminster, B. C., transit and level work on city surveys (5 months). *TT 0.4: SP 0.4.*—1908 to 1925 (except April to July 1910 Draftsman, Texas & Oklahoma Ry.) with U. S. Govt., 2 years as Surveyor, and 9 years Chf. of Party, on public-land subdivision and surveys and 5 years Special Agt., examining, selecting and supervising surveys of lands for irrigation and oil development, etc. *TT 16.1: SP 0.1: P 16: RC 5.*—May to Aug. 1926 Asst. Engr., Parsons Pulp & Lumber Co., on surveys and inspection of railroad construction. *TT 0.3: P 0.3.*—Aug. 1926 to Dec. 1927 Draftsman, Aluminum Co. of America, drafting, estimating, projecting location of railroads and highways. *TT 1: SP 0.5: P 0.5.*—Dec. 1927 to Sept. 1929 Jun. Engr. and Inspector, Southern Ry., drafting and inspecting design of yard changes and detours. *TT 0.9: SP 0.4: P 0.5.*—Sept. 1929 to date with Nantahala Power & Light Co., Bryson City, N. C., drafting, computing, estimating and projecting locations for highway and railroad revisions. *TT 0.6: P 0.6.*—*TT 21.3: SP 3.4: P 17.9: RC 5.* Refers to H. P. Hevenor, A. F. Johtz, F. T. Miller, P. C. Painter, J. E. S. Thorpe.

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(1) SNADER, DAVID LEVI, Stevens Inst. of Technology, Hoboken, N. J. (Age 42. Born Westminster, Md.) Licensed Civ. Engr. and Land Surveyor, State of New Jersey. 1913

Arch. Engr., 1914 C. E., and 1918 M. S., Ohio Northern Univ. 1926 M. A., Columbia Univ. *TT 4: P 4.*—1913 to 1914 Instructor, Depts. of Civ. Eng. and Archt., Ohio Northern Univ. *TT 0.2: SP 0.2.*—Sept. 1914 to Sept. 1917 Prof. in charge of Dept. of Architecture and Structural Eng. and (1917) Acting Dean, Coll. of Eng., Valparaiso Univ., also private practice as Archt. and Engr. *TT 3: P 3: D 3.*—Sept. 1917 to Sept. 1919 Prof. of Eng., Southwestern Presbyterian Univ., also superintending Arch. and Engr. *TT 2: P 2: RC 2: D 2.*—Sept. 1919 to Sept. 1924 Prof. in Chg., Dept. of Civ. Eng., South Dakota State Coll., reorganized work of Dept., planned, prepared and installed new laboratory and equipment for testing concrete and reinforced concrete and highway materials; also Civ. Engr. and Archt., consulting and on design of new structures for State of South Dakota. *TT 5: P 5: RC 5: D 5.*—Sept. 1924 to date Prof. of Civ. (formerly Structural) Eng., Stevens Institute of Technology; since June 1925 also surveys, investigations and research on disintegration of concrete structures in various parts of United States, Columbia Univ. *TT 5.6: P 5.6: RC 5.6: D 5.6.*—*TT 19.3: SP 0.2: P 19.6: RC 12.6: D 15.6.* Refers to J. Berg, A. H. Beyer, J. K. Finch, C. O. Gunther, W. J. Krefeld, J. S. Peck, G. T. Seabury.

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(1) SONN, GEORGE PAUL, 12 Oakwood Pl., Elizabeth, N. J. (Age 40. Born Hamburg, Germany.) Licensed Prof. Engr., New York State.—1915 Field Engr., Chase Metal Works, Waterville, Conn., on plant construction, laying out buildings, inspecting and supervising construction and installing equipment. *TT 1: P 1.*—1916 to 1918 Asst. Engr., Bridgeport (Conn.) Brass Co., on plant construction, design and construction supervision, plant layout, buildings, dock, industrial railroad, power-plant work, etc. *TT 3: P 3: RC 3: D 3.*—1919 to 1921 Chf. Engr., National Conduit & Cable Co., and National Brass & Copper Tube Co., Hastings-on-Hudson, N. Y., construction and mechanical work, being in responsible charge of construction, power and mechanical engineering. *TT 3: P 3: RC 3: D 3.*—1921 to 1923 Consultant, City of Yonkers, N. Y., on valuation of industrial properties; also Engr., Standard Underground Cable Co., Perth Amboy, N. J., on design of plant in St. Louis, Mo., and of special equipment. *TT 2: P 2: RC 2: D 2.*—1924 to 1926 Mech. and Constr. Engr., U. S. Metals Refining Co., Carteret, N. J., and American Metal Co., New York City, on design of power plant, several boiler and turbine installations, ore-storage plant, also supervising field work. *TT 3: P 3: RC 3: D 3.*—1927 to 1928 Office Engr., with Louis T. Klauder, Cons. Engr., Philadelphia, Pa., on mechanical and construction work, being Design Engr. on power plant for City of Hagerstown, Md. (3 months), Asst. Chf., Div. of Design, Dwight P. Robinson & Co., Cons. Engrs., New York City, on steel, concrete, architecture, electrical, industrial and power plant work, and (3 months) with Combustion Eng. Co., New York City, special work on combustion in power plant of New York Steam Co. *TT 2: P 2: RC 2: D 2.*—1928 to 1929 with Foster, McConnell & Co., New York City, on investigation of industrial properties. *TT 0.5: P 0.5.*—1929 to date Engr., Ford, Bacon & Davis, Inc., Engrs., New York City, on investigations, mechanical, construction, industrial, business, etc., engineering reports. *TT 1: P 1.*—*TT 15.5: P 15.5: RC 13.2: D 13.2.* Refers to W. E. Belcher, H. B. Catlin, F. H. Frankland, C. D. Pollock, E. M. Vincent, C. L. Weir.

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(11) SPIELMAN, JOHN VAN VOORHIES, 583 San Ysidro Rd., Santa Barbara, Cal. (Age 30. Born Pittsburgh, Pa.) 1922 A. B. in Civ. Eng., Stanford Univ. *TT 4: P 4.*—June 1922 to Jan. 1923 Instrumentman, until Sept. 1922 with Montecito County Water Dist., then with California Highway Comm. *TT 0.3: SP 0.3.*—Feb. to April 1923 Timekeeper, Union Oil Co. of California, keeping construction cost records. *TT 0.1: SP 0.1.*—May 1923 to Oct. 1925 Asst. Engr., Montecito County Water Dist., on construction of water-distribution system, including design and inspection of reinforced concrete reservoirs, etc. *TT 2: SP 0.5: P 1.5: RC 1.2: D 0.6.*—Oct. 1925 to June 1926 Bridge Engr., City of Santa Barbara, Cal., being Designer and Chf. Inspector of five small reinforced concrete bridges. *TT 0.7: P 0.7: RC 0.7: D 0.4.*—July 1926 to date Designing Engr., and Res. Engr. on Buell on Juncal Dams, for Montecito County Water Dist., on design and Res. Engr. on construction of 100-ft. hydraulic fill dam, 55-ft. multiple arch dam, etc., and on preliminary design of 160-ft. concrete arch dam. *TT 3.8: P 3.8: RC 3.2: D 1.3.*—*TT 10.9: SP 0.9: P 10: RC 5.1: D 2.3.* Refers to G. C. FitzGerald, C. T. Leeds, C. D. Marx, W. A. Perkins, M. M. O'Shaughnessy, C. Wyant.

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(1) SPRINGER, ERNEST, 20 Erie St., Dumont, N. J. (Age 33. Born West Hoboken, N. J.) 3 years student in Civ. Eng., Hefly Inst., Brooklyn, N. Y.—March 1917 to May 1918 in military service at Canal Zone, Panama, being Rodman and Transitman on topographical and triangulation survey. *TT 0.5: SP 0.5.*—June 1919 to Sept. 1923 Transitman and Chf. of Party with Wm. Beuscher, C. E., Teaneck, N. J., on design and construction of roads and

sewers and on surveys. *TT 3.2: SP 1: P 2.2: RC 2.2.*—Sept. 1923 to March 1924 Jun. Engr., Transit Comm., New York, in charge of field work on Eighth Ave. subway, establishing base line and making topographical survey. *TT 0.5: P 0.5: RC 0.5.*—April 1924 to March 1927 Jun. Engr. and Asst. Engr., Eng. Dept., Hudson County, N. J., being Asst. in charge on Journal Sq. Bridge (about \$1 500 000); also on county highway. *TT 2.9: P 2.9: RC 2.5: D 0.2.*—April 1927 to Feb. 1928 Asst. Engr. with C. C. Freeborn, Jr., Civ. and Mun. Engr., Dumont, N. J., on design and in charge of municipal work, improvement (approx. \$100 000) completed. *TT 0.8: P 0.8: RC 0.8: D 0.3.*—Feb. 1928 to date Asst. Engr. with Arthur Noack, Civ. and Mun. Engr., Hackensack, N. J., in charge in field on municipal work and property survey. *TT 2.2: P 2.2: RC 2.2.*—*TT 10.2: SP 1.5: P 8.7: RC 8.3: D 0.6.* Refers to C. L. Bogert, A. B. Cohen, P. W. Fraleigh, C. C. Freeborn, Jr., A. Noack, F. J. Radigan.

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(12) **STILES, ERNEST MILO**, Box 625A, R. F. D. No. 5, South Tacoma, Wash. (Age 38. Born Stiles, N. Dak.) Nov. 1909 to June 1913 Chainman and Instrumentman, Northern Pacific Ry. Co. *TT 1.8: SP 1.8.*—1913 to 1923 various work.—March 1923 to Oct. 1925 with Public Utilities Dept., Tacoma, Wash., on Cushman hydro-electric plant, until Aug. 1923 as Instrumentman, then Chf. of Party on location and construction of dam, transmission line, etc. *TT 2.1: SP 0.4: P 1.7: RC 0.1.*—Nov. 1925 to date Constr. Engr. for City of Tacoma, until April 1929 with Water Dept. on reservoir (25 000 000 gal.), trunk lines, etc., then in City Engr.'s office, on design of trunk sewers, concrete structures and sanitary sewer system. *TT 4.4: P 4.4: RC 2: D 1.*—*TT 3.3: SP 2.2: P 6.1: RC 2.1: D 1.* Refers to J. A. Arntson, O. H. Hallberg, W. A. Kunigk, C. E. Putnam, F. E. Rogers, J. L. Stannard.

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(13) **STRIEDGLER, RICHMOND HOBSON**, 2211 K St., Sacramento, Cal. (Age 29. Born Fredericksburg, Tex.) Sept. 1917 to June 1918 and Sept. 1920 to June 1922 Student, Texas Agricultural & Mechanical Coll. *TT 1.5: P 1.5.*—May to Sept. 1919 Rodman, Gillespie County, on highway construction. *TT 0.2: SP 0.2.*—Sept. to Dec. 1922 Rodman, Wichita Falls Reclamation Dist., on earth-fill dam construction. *TT 0.2: SP 0.2.*—Jan. 1923 to April 1924 Transitman, M. of W. Dept., Pacific Elec. Ry. *TT 1.1: SP 0.1: P 1.*—April 1924 to March 1925 Draftsman and Transitman, Pacific Gas & Elec. Co., on construction of concrete dam and tunnel. *TT 0.9: P 0.9.*—April 1925 to Sept. 1928 Draftsman, Transitman and Asst. Engr., M. of W. Dept., Southern Pacific Co. *TT 3.5: P 3.5: RC 1.5.*—Sept. 1928 to Feb. 1929 Draftsman, City of Oakland, on design and estimating of sewers and drainage system. *TT 0.5: P 0.5.*—*TT 7.9: SP 0.5: P 7.4: RC 1.5.* Refers to O. N. Floyd, G. C. Green, E. H. Hatch, J. L. Lochridge, T. A. Munson.

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(14) **STUCKEY, ARTHUR RAY**, 540 Paul Brown Bldg., St. Louis, Mo. (Age 33. Born Washington, Ind.) 1923 B. S., Mass. Inst. Tech. *TT 4: P 4.*—Summer 1922 Rodman on Davis Bridge Hydro Development, New England Power Co., Wilmington, Vt.—June 1923 to April 1924 Jun. Engr., Alabama Power Co., Birmingham, Ala., on stream-flow studies, Chf. of Field Party on Martin Dam Hydro Development (about 8 months) and Draftsman on aerial surveys. *TT 0.4: SP 0.4.*—April 1924 to date Instrumentman, Field Engr. and Res. Engr. with Stone & Webster Eng. Corporation, engaged as follows: April 1924 to Nov. 1925 Chf. of Field Party and in charge of field parties, Bartlett's Ferry Hydro Development, Columbus, Ga.; Nov. 1925 to Oct. 1926 Inspector of structural steel fabrication and erection, being in charge of sub-contractors, Neches Power Station, Beaumont, Tex.; Oct. 1926 to Aug. 1928 Field Engr., 30 000-k.w. addition to Norfolk (Va.) Steam Station, and 35 000-k.w. addition to Neches Power Station; Aug. to Dec. 1928 in charge piping control section for power house and steam-distribution lines at Atmospheric Nitrogen Plant, Hopewell, Va.; March 1929 to March 1930 Res. Engr., Saskatoon (Sask.) Power Plant, 10 000-k.w. steam station for Govt. of Province; since March 1930 Office Engr., on transmission lines for Osage project of Union Elec. Light & Power Co. of St. Louis, Mo. *TT 5.1: SP 0.9: P 4.2: RC 4.*—*TT 9.5: SP 1.3: P 8.2: RC 4.* Refers to L. V. Branch, L. Gurney, J. H. Hood, L. G. Warren, H. C. Whitmore.

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(15) **TELLER, CARL FREEMAN**, P. O. Box 463, Navasota, Tex. (Age 28. Born San Antonio, Tex.) Aug. 1920 to March 1921 Rodman with County Engr., Atascosa County, Tex. *TT 0.2: SP 0.2.*—March to June 1921 Rodman, L. J. Smith Constr. Co., Kansas City, Mo. *TT 0.1: SP 0.1.*—July 1921 to July 1924 with E. J. Foster, Cons. Engr., Laredo, Tex., as Instrumentman and Draftsman on land survey and highway location, Chf. of Party on pipe-line location, topographical survey, major subdivision and highway construction and Asst. Engr. on highway construction; designed a state highway project. *TT 2.3: SP 0.8:*

P 1.5: RC 1.5: D 0.4.—July 1924 to July 1927 with H. B. Zachry Constr. Co., as Supt. of highway construction, bridges, earthwork and buildings, also on design, estimating and supervision. **TT 3: P 3: RC 3: D 5.**—July 1927 to April 1929 Gen. Contr. on construction of sewers, residence, commercial and school buildings, also on design of buildings, including a mine building to house a rolling mill. **TT 1.8: P 1.8: RC 1.8: D 0.5.**—April 1929 to date Prin. Asst. to County Engr., Grimes County and Res. Engr. for State, on construction of earthwork, small drainage structures, concrete girder and steel bridges, gravel and concrete paving. **TT 0.9: P 0.9: RC 0.9.**—**TT 8.3: SP 1.1: P 7.2: RC 7.2: D 1.4.** Refers to L. B. Bone, F. C. Heins, T. E. Huffman, J. T. L. McNew, O. A. Seward, Jr.

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(13) TUDOR, RALPH ARNOLD, 2235 Eleventh Ave., Sacramento, Cal. (Age 28. Born Colorado Springs, Colo.) 1925 C. E., Cornell Univ. **TT 4: P 4.**—June 1919 to June 1923 Student, U. S. Military Acad.—June 1923 to Nov. 1928 2d Lieut., and Nov. 1928 to July 1929 1st Lieut., Coast Artillery Corps (1 year) and Corps of Engrs., U. S. Army, 2 years being detailed as student at Cornell Univ. and at Engr. School, Ft. Humphreys, Va., remainder of time with troops at Fts. Monroe and Humphreys, Va., and Ft. Lewis, Wash. **TT 4.1: P 4.1: RC 3.1.**—Aug. 1929 to date Jun. Designing Engr., Bridges, Grade III, Div. of Highways, Dept. of Public Works, California. **TT 0.7: P 0.7: D 0.7.**—**TT 8.3: P 8.8: RC 3.1: D 1.3.** Refers to A. S. Ackerman, H. E. Kuphal, N. C. Raab, R. H. Twaddle.

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(13) von BERGEN, HAROLD EMIL, 1517 Eleventh St., Sacramento, Cal. (Age 25. Born Petersburg, Nebr.) 1929 B. S. in Eng., Ore. State Agri. Coll. **TT 4: P 4.**—June 1929 to date Office Engr., State of Oregon, dam analysis, drafting and finance. **TT 0.8: P 0.8.**—**TT 4.8: P 4.8.** Refers to S. M. P. Dolan, G. E. Goodall, W. H. Holmes, J. R. Luper, C. B. McCullough, C. A. Mockmore, H. S. Rogers.

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(7) WENTZ, CLARENCE ARTHUR, Elmore, Minn. (Age 26. Born Elmore, Minn.) 1927 B. S. in C. E., Univ. of Minn. **TT 4: P 4.**—Jan. to June 1928 Surveyman, U. S. Engr. office, Chicago, Ill., being Map Draftsman and Instrumentman on sounding work at Chicago harbor. **TT 0.2: SP 0.2.**—May-Dec. 1927 and June 1928 to date Field Engr., The Pitometer Co., New York City, on water-waste surveys (locating unaccounted for water by measurements and special sounding devices to locate underground leaks). **TT 1.6: SP 0.3: P 1.3: RC 1.3.**—**TT 5.8: SP 0.5: P 5.3: RC 1.3.** Refers to H. E. Beckwith, E. D. Case.

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(7) WHITNEY, EDWARD NELSON, 336 Norris Court, Madison, Wis. (Age 39. Born Chicago, Ill.) 1913 B. S. in C. E., Univ. of Wis. **TT 4: P 4.**—Summer 1909 and Feb. to Sept. 1910 Rodman and Levelman, Chicago & Alton R. R. **TT 0.3: SP 0.3.**—Aug. to Nov. 1911 Surveyor, U. S. Engr. Dept., Hastings, Minn., on Mississippi River sand pump, setting guide buoys and lines, making soundings and calculations. **TT 0.1: SP 0.1.**—Nov. 1911 to Feb. 1912 Computer, R. R. Comm. of Wisconsin, Eng. Dept., assisting in valuations and rate studies. **TT 0.2: SP 0.2.**—Summer 1912 Transmittan, Chicago, Milwaukee & St. Paul Ry.—June 1913 to April 1914 Engr. and Computer, Wisconsin R. R. & Tax Comm., Eng. Dept., assisted on valuations and took field data. **TT 0.8: SP 0.1: P 0.7: RC 0.2.**—May 1914 to April 1915 Computer and Surveyor, July to Sept. 1917 Surveyor and Designer, and July 1919 to Sept. 1922 Surveyor and Engr., Wisconsin Highway Comm., Div. 1, Madison, computed and laid grades, made road and bridge surveys, plans and road relocations, estimates, etc., and (1919) designed special drainage structures, made final cross-sections, etc. **TT 4.3: SP 0.1: P 4.2: RC 2.1: D 2.4.**—April 1915 to March 1916 Asst. Computer and Levelman, Interstate Commerce Comm., Central Dist., with roadbed and track party. **TT 0.9: P 0.9: RC 0.5.**—March 1916–June 1917 and Oct. 1917 to June 1919 with U. S. Army, until June 1917 being Probational 2d and 1st Lieut., Corps of Engrs., 10 months with Punitive Expedition in Mexico, 5 months on drills, construction and reorganization at El Paso, Tex., and after Oct. 1917 Private, Corporal and Sergeant, Co. D, 23d Engrs., from Oct. 1917 to April 1918 at Camp on construction, etc., in United States, then with A. E. F. in France, on railroad construction, road resurfacing, quarry operation; Meuse-Argonne Offensive. **TT 2.9: P 2.9: RC 1.5: D 0.1.**—Oct. 1922 to Feb. 1923 Instructor in Civ. Eng., Extension Div., Univ. of Wisconsin, also assisting on roads, pavements and city planning at Coll. of Engineering. **TT 0.4: P 0.4: D 0.2.**—March 1923 to date with Daniel W. Mead and Charles V. Seastone, Cons. Engrs., Madison, as Engr. in office and field on investigations, surveys, hydro-electric and steam-plant design and construction, including boiler-houses, dams, etc. **TT 7.2: P 7.2: RC 2.7: D 3.3.**—**TT 2.1: SP 0.8: P 20.3: RC 7: D 6.** Refers to A. R. Hirst, D. W. Mead, H. W. Mead, W. D. Pence, C. V. Seastone, L. S. Smith, F. E. Turneure, C. N. Ward.

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(12) **WILCOX, BUELL ELSWORTH**, 19 South Twenty-Sixth St., Corvallis, Ore. (Age 24. Born Milton, Ore.) 1927 B. S. in C. E., Ore. State Agri. Coll. *TT 4: P 4.*—Sept. 1927 to June 1928 graduate study and (part of time) instruction in Mechanical Drawing at Oregon State Coll.—Summer 1927 Foreman in charge of grading, and summer 1928 Asst. Supt. in charge of drains, trimming, grading and steel on main canal on the Kittitas Reclamation Project, Ellensburg, Wash., for General Constr. Co., Seattle, Wash. *TT 0.3: P 0.3: RC 0.3.*—Summer 1929 Foreman for U. S. Forest Service, Chelan National Forest, Twisp, Wash., in charge of building timber bridges.—Sept. 1928 to date Instructor in Civ. Eng., Oregon State Coll., organized course in Mechanical Drawing and wrote Field Manual in Plane Surveying. *TT 1: SP 0.7: P 0.3.—TT 5.3: SP 0.7: P 4.6: RC 0.6.* Refers to S. M. P. Dolan, J. R. Griffith, G. W. Holcomb, C. B. McCullough, C. A. Mockmore, H. S. Rogers, S. H. Sims.

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(13) **WOOD, HOWARD CHARLES**, 1515 Tenth St., Sacramento, Cal. (Age 30. Born Danville, Cal.) 1923 B. S. in Civ. Eng., Univ. of Cal. *TT 4: P 4.*—Jan. to June 1918 Rodman and Chainman, Interstate Commerce Comm., on railroad valuation. *TT 0.2: SP 0.2.*—May 1923 to Oct. 1925 and June to July 1926 with American Toll Bridge Co. as Draftsman in Res. Engr.'s Office, and Asst. Engr., on construction of Carquinez Highway Bridge at Crockett, Cal. *TT 1.3: SP 1.3.*—July 1926 to Nov. 1928 Asst. Engr., Feather River Power Co., in charge of surveys and Prin. Asst. on construction of Bucks Creek penstock, power house and storage dam, California. *TT 2.3: P 2.3: RC 2.3.*—April 1929 to date Bridge Designer, Grade 3, California State Dept. of Public Works, Div. of Highways, designing and detailing and checking shop details for highway bridges. *TT 1: P 1: D 1.—TT 8.8: SP 1.5: P 7.3: RC 2.3: D 1.* Refers to G. J. Calder, C. Derleth, Jr., D. R. McFarland, H. D. Stover, S. K. Whipple, R. White.

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(2) **WURTS, WILLIAM ALFRED DuBOIS**, 43 Magnolia St., Hartford, Conn. (Age 26. Born Hartford, Conn.) 1924 C. E., Rens. Pol. Inst. *TT 4: P 4.*—Sept. 1924 to June 1925 Instructor in Civ. Eng., Rensselaer Polytechnic Inst. *TT 0.4: SP 0.4.*—June 1925 to date with Dept. of Eng., Hartford, Conn., until Jan. 1927 as Transitman, Inspector, Draftsman and Chf. of Party, then on design and supervising construction of sewers, bridges, retaining walls, etc., being Senior Asst. Engr., Sewer and Bridge Div., at various times (in absence of Div. Engr.) and July 1928 to March 1929 acting as Div. Engr.; at present on design of flood-protection structures. *TT 4: SP 0.8: P 3.2: RC 1.5: RC 1.7.—TT 8.4: SP 1.2: P 7.2: RC 1.5: D 1.7.* Refers to H. R. Buck, R. N. Clark, H. P. Eddy, W. J. Ennis, J. T. Henderson, J. H. Kimball, L. F. Peck, R. J. Ross.

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(9) **YORT, ANDERS PETER**, 2563 Euclid Ave., Cincinnati, Ohio. (Age 37. Born Lille Grandlose, Denmark.) 1917 B. S. in C. E., Royal Tech. Coll., Copenhagen, Denmark. *TT 4: P 4.*—June 1917 to June 1918 Field Engr.'s Asst., Nordsjaelland Elektricitetsvaerk, Copenhagen, surveying, etc. *TT 1: P 1: RC 0.3.*—June 1918 to Nov. 1920 Designer, successively with Christiani & Nielsen ($\frac{1}{2}$ year), Ollgaard & Petersen ($1\frac{1}{2}$ years) and Danske Statsbaner ($\frac{1}{2}$ year) Copenhagen, designing concrete, etc. *TT 2.5: P 2.5: RC 0.5: D 2.*—Jan. 1921 to June 1922 Draftsman, Lackawanna Railroad, Hoboken, N. J., designing flat-slab bridges, etc. *TT 1: SP 0.5: P 0.5: D 1.*—Jan. 1923 to Jan. 1925 Supervisor, Ollgaard & Petersen, Copenhagen, railroad extension, in charge of most of work. *TT 2: P 2: RC 1.5: D 0.5.*—March 1925 to Feb. 1926 Contr. with Aug. Kjar-Petersen, Copenhagen, in charge of construction of harbor at Grenaa, Denmark. *TT 0.9: P 0.9: RC 0.9.*—Feb. 1926 to Nov. 1927 various work.—Nov. 1927 to March 1928 Draftsman, Long Island R. R., Jamaica, N. Y. *TT 0.2: SP 0.1: P 0.1.*—March 1928 to date Designer, Cincinnati (Ohio) Union Terminal Co., designing reinforced concrete arches, frames, etc. *TT 1.8: SP 0.2: P 1.6: D 1.6.—TT 13.4: SP 0.8: P 12.6: RC 3.2: D 4.6.* Refers to J. C. V. Christensen, F. H. Horton, P. Jones, P. Moller, T. H. Niermann.

FOR TRANSFER

FROM THE GRADE OF ASSOCIATE MEMBER

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(1) **ARMOUR, WENDELL WALLACE**, Assoc. M., 4 Place de la Concorde, Paris, France. (Elected Aug. 30, 1926.) (Age 37. Born Homestead, Pa.) Student, C. E. course, Univ. of Pittsburgh (1911 to 1912) and Sheffield Scientific School (1912 to 1915). *TT 2: P 2.*—

Summer 1913 with Pennsylvania R. R. Lines West and April to Sept. 1916 Engr., P. R. R. Lines East, on construction, Allegheny Valley Div., bridge (concrete arch), retaining wall work, excavation, etc. *TT 0.2: SP 0.2.*—Sept. 1916 to March 1917 Field Engr., Interborough Rapid Transit Co., New York, on subway extension at 162d St. and Sedgwick Ave., tunnel work, retaining walls, etc. *TT 0.3: SP 0.3.*—March to June 1917 drafting and surveying, J. G. White Eng. & Management Corporation, Santa Clara Province, Cuba. *TT 0.1: SP 0.1.*—Aug. 1917 to March 1918 drafting, Louisiana State Highway Dept., New Orleans. *TT 0.4: SP 0.4.*—April to Sept. 1918 Materials Supervisor, U. S. Shipping Board, Emergency Fleet Corporation, Southern Div., New Orleans. *TT 0.5: P 0.5: RC 0.5.*—Sept. to Dec. 1918 at Air Service Officers' Training Camp, U. S. Army, Champaign, Ill.—March to Aug. 1919 Draftsman, Doullut & Williams Shipbuilding Co., New Orleans, steel ships and ship yard. *TT 0.2: SP 0.2.*—Sept. 1919 to March 1921 Engr. on exploration, investigation and development for Societe Internationale Foristiers et Miniere du Congo, of diamond deposits in Congo and Portuguese Angola, Africa, individual charge at isolated points in interior Africa. *TT 1.3: P 1.3: RC 1.3: D 1.3.*—April to Dec. 1921 Auditor, U. S. Shipping Board, Bremen, Germany. *TT 0.8: P 0.8: RC 0.8.*—April 1922 to May 1923 Engr. for Hollingsworth & Beatty, Paris, France, Agts. for L. C. Gillespie & Sons, New York, on construction and investigation in Belgian Congo, Africa, supervised construction at Kinshasa and establishment of substations in interior Congo as collecting points for gumcopal, ivory, etc. *TT 1.1: P 1.1: RC 1.1: D 1.1.*—Sept. 1923 to June 1924 Valuation Engr., Bartlett-Hayward Co., New York, on revaluation of plants and properties of Consolidated and allied gas companies in New York Dist. *TT 0.8: P 0.8: RC 0.8.*—July to Dec. 1924 Engr., Elec. Bond & Share Co., in Cuba. *TT 0.5: P 0.5: RC 0.5: D 0.5.*—Jan. to June 1925 Asst. Engr. of Way and Works, Havana (Cuba) Central R. R., supervising field work. *TT 0.5: P 0.5: RC 0.5: D 0.5.*—June 1925 to May 1926 Chf. Engr., International Rys. of Central America, at Salvador, on maintenance and new structures. *TT 0.9: P 0.9: RC 0.9: D 0.9.*—May 1926 to May 1928 Engr., Celite Co., New York City and Los Angeles, Cal., supervising work and consulting as to application of celite in concrete construction. *TT 2: P 2: RC 2: D 2.*—May 1928 to date consulting work, Paris, France, on apartment building construction (reinforced concrete), acting as Cons. Engr. on projects in Eastern France for American Battle Monuments Comm., also in complete charge of construction of Airport, Seville, Spain. *TT 1.9: P 1.9: RC 1.9: D 1.9.*—*TT 13.6: SP 1.3: P 12.3: RC 10.3: D 8.2.* Refers to C. J. Carroll, F. W. Gardiner, E. N. Johnston, C. MacCallum, W. B. Poland, S. F. Shaw, R. S. Webster, R. J. Wig.

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(8) BEACH, WILLIAM ERNST, Assoc. M., 2015 Tribune Tower, Chicago, Ill. (Elected Oct. 15, 1923.) (Age 40. Born Chicago, Ill.) Registered Engr., State of Illinois. Prof. Engr., State of New York.—1912 B. S., Armour Inst. Tech. *TT 4: P 4.*—June to Aug. 1910 Rodman and Instrumentman, Menominee River Lumber and Boom Co., Menominee, Mich.—Aug. to Oct. 1910 with Union Stock Yards and Transit Co., Chicago, Ill., building design in steel and wood and supervision of construction.—June to July 1912 with Rodgers Constr. Co., Chicago, Ill., on concrete detailing. *TT 0.2: P 0.2: D 0.2.*—Aug. to Sept. 1912 with Illinois Central Ry., Centralia, Ill., on yard construction, location, earthwork, etc. *TT 0.1: P 0.1: RC 0.1.*—Sept. 1912 to March 1913 with Chicago & Northwestern Ry., Chicago, Ill., on location, concrete, bridge steel, construction. *TT 0.3: P 0.3: RC 0.3.*—March 1913 to Sept. 1914 with Kennicott Steel Co., Chicago Heights, Ill., on water towers, tank cars, water softeners, stacks, plate work, design, detail, checking and inspection. *TT 1.5: P 1.5: RC 1.5: D 1.*—Sept. 1914 to April 1916 with Standard Oil Co. of Indiana, Wood River, Ill., on power plants, oil refinery design, steel, wood and concrete construction, checking, estimating, etc. *TT 1.5: P 1.5: RC 1.5: D 1.5.*—April 1916 to May 1918 with O'Keefe-Orbison Eng. & Constr. Co., Appleton, Wis., on steam and hydro plants, paper mills, design, estimating, construction, reports, surveys, financing, etc. *TT 1.7: P 1.7: RC 1.7: D 1.7.*—May to Dec. 1918 Combat Flyer, U. S. Air Service, Texas; Dec. 1918 to Aug. 1919 with U. S. Emergency Fleet Corporation, Cleveland, Ohio, and Duluth, Minn., on inspection of hulls and machinery. *TT 0.7: P 0.7.*—Aug. to Dec. 1919 with Frank C. Chase, Inc., Chicago, Ill., on foundry and building design, checking, etc. *TT 0.3: P 0.3: RC 0.3: D 0.3.*—Dec. 1919 to date with V. D. Simons, Inc., Chicago, Ill., steam hydro paper mills, designing, detailing, estimating, reports, construction, operation, etc., on many developments for pulp and paper companies, etc. (names given in application). *TT 10.3: P 10.3: RC 10.3: D 6.*—*TT 20.6: P 20.6: RC 15.7: D 10.7.* Refers to F. D. Chase, E. S. Nethercut, J. Nicolet, A. Stein, R. L. Stevens, J. F. Still, C. Terzaghi.

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(1) **BLACKMORE, GEORGE GLOVER**, Assoc. M., 37-33 Seventy-Sixth St., Jackson Heights, N. Y. (Elected Nov. 30, 1909.) (Age 55. Born Washington, Ind.) 1896 C. E., Princeton Univ. *TT 4: P 4.*—Oct. 1897 to May 1898 Chairman, Metropolitan St. Ry. Co., New York City. *TT 0.3: SP 0.3.*—1898 with Battery A, Pennsylvania Volunteers in Spanish-American War.—Jan. to March 1899 Rodman, Baltimore & Ohio R. R. *TT 0.1: SP 0.1.*—March 1899 to Sept. 1902 with Southern Pacific R. R., as Officeman and Computer (2 months), Chairman and Rodman (6 months), then Asst. Engr., Constr. Dept., and on construction of Coast Line, from Surf to Elwood, Cal., until near completion, then on Central Pacific Div. in Nevada (2½ years), in charge of construction and location, and in full charge of over 25 miles of change of line, with 8 steel truss bridges across Humboldt River. *TT 3.3: SP 0.3: P 3: RC 3.*—Sept. 1902 to Feb. 1912 Engr. and Supt. for Wilson & Baillie Mfg. Co., Contrs., Brooklyn, N. Y., until Oct. 1903 and March to May 1904 on construction of Div. 1, Atlantic Ave. Subway, Long Island R. R., and on Atlantic Ave. Improvement, Oct. 1903 to March 1904 on grading, curbing, paving, etc., in Merida, Yucatan, and after May 1904 on municipal contract work for Highway Dept., Queens Borough and New York City, being Res. Engr. and Supt.-in-Chg. *TT 9.5: P 9.5: RC 9.*—March 1912 to March 1913 Res. Engr., Underpinning & Foundation Co., New York City, in charge of underpinning buildings along Lexington Ave. subway construction, Secs. 8, 10 and 11, Route 5. *TT 1: P 1: RC 1.*—March to Aug. 1913 Res. Engr., Thos. Brown Contr. Co., Astoria, N. Y., in charge of repaving Vernon Ave., Long Island City to Astoria. *TT 0.5: P 0.5: RC 0.5.*—Aug. 1913 to June 1919 and March 1925 to Feb. 1927 with Rapid Transit Subway Constr. Co., New York City, until June 1919 as Res. Engr. on construction of Sec. 6, Routes 4 and 38, 7th Ave., and Sec. 7, Route 5, Lexington Ave., and after March 1925 engineering work on subway construction delay claims. *TT 7.5: P 7.5: RC 4.5.*—Jan. to March 1919 Engr. and Supt., W. C. Whitney Co., New York City, on construction of warehouse, barracks, sea wall, Dept. of Military Operation, U. S. Govt., Bedloe's Island, New York Harbor. *TT 0.2: P 0.2: RC 0.2.*—April 1919 to March 1925 mercantile work, Elec. Eng. & Appliance Co., Cincinnati, Ohio.—March 1927 to date Chf. Engr., Geo. J. Atwell Foundation Corporation, New York City, on heavy and deep foundation work for tall building construction. *TT 3: P 3: RC 3.*—*TT 29.4: SP 0.7: P 28.7: RC 21.2.* Refers to C. H. Crooks, R. H. Jacobs, W. C. McNaughton, J. H. Myers, G. H. Pegram, R. Ridgway.

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(6) **BLUNDON, JOSEPH PAUL**, Assoc. M., Keyser, W. Va. (Elected Junior, Oct. 14, 1919; Assoc. M., Sept. 10, 1923.) (Age 32. Born Riverdale, Md.) 1915 B. Sc. in C. E., Univ. of Md. 1917 C. E., Cornell Univ. *TT 4: P 4.*—July to Dec. 1915 Steel Inspector and Foreman, Washington Steel & Ordnance Co., Glesboro Point, D. C. *TT 0.3: SP 0.3.*—Jan. to Sept. 1916 Inspector, Midvale Steel & Ordnance Co., Nicetown, Pa. *TT 0.4: SP 0.4.*—July to Nov. 1917 Inspector and Asst. Engr., under supervision, inspecting and assisting on design of water-works, sewers and pavements. *TT 0.2: SP 0.2.*—Dec. 1917 to June 1918 Asst. Engr., West Virginia State Road Comm., Piedmont, W. Va., preparing plans and supervising construction of concrete roads. *TT 0.3: SP 0.3.*—July to Dec. 1918 Private, Sergeant and 2nd Lieut. of Engrs., U. S. Army, Camp A. A. Humphreys, Va., 3d Engr. Training Regt. *TT 0.5: P 0.5.*—Jan. to Oct. 1919 Asst. Div. Engr., West Virginia Road Comm., Charleston, W. Va., preparing standards, supervising preparation of plans and construction on State and Federal Aid projects. *TT 0.8: P 0.8: RC 0.8: D 0.8.*—Nov. 1919 to June 1921 County Engr., Boone County, W. Va., supervising location, plans and construction of roads. *TT 1.7: P 1.7: RC 1.7: D 1.7.*—July 1921 to April 1924 Senior Asst. Engr., Div. 5, State Road Comm. of West Virginia, supervising surveys, preparing plans and assisting in supervision of construction of state roads (bond issue \$50 000 000). *TT 2.8: P 2.8: RC 2.8: D 2.8.*—May 1924 to date Cons. Engr., Keyser, W. Va., being Secy.-Treas. and Gen. Mgr., Polino Constr. Co. (May 1924–May 1929), Pres., Tri-State Utilities Corporation and Milton Water Co., having general supervision of operation of water plants for latter two, and municipal plants at Ridgeley, Keyser, Romney and Lumberport, W. Va.; Engr. on design and supervision of construction of dams, bridges, water-purification plants, water-distribution and sewerage systems, sewage-disposal plants, streets and roads; appraisals of water and gas properties, including United Fuel Gas Co., etc.; Contr. and Gen. Mgr. on construction of roads, bridges, water-works, etc. (over \$250 000 annually). *TT 6: P 6: RC 6: D 6.*—*TT 17: SP 1.2: P 15.8: RC 11.3: D 11.3.* Refers to T. F. Boltz, W. S. Downs, C. P. Fortney, G. H. Hill, H. A. Levering, C. E. McCoy, H. E. Snyder, H. J. Spelman.

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(13) **BROWN, ROBERT FRANCIS**, Assoc. M., 1725 Van Ness Ave., San Francisco, Cal. (Elected Dec. 14, 1925.) (Age 34. Born Osage City, Kans.) 1926 A. B. in Civ. Eng.,

Leland Stanford, Jr., Univ. TT 4: P 4.—Jan. 1916 to Sept. 1925 (except Aug. 1917 to July 1919 with 110th Engrs., 35th Div., U. S. Army, and Sept. 1916 to June 1917 and Sept. 1919 to Jan. 1920 student) with Burns & McDonnell Eng. Co., Kansas City, Mo., as follows: Jan. to Sept. 1916 Draftsman on water-works, hydro-electric improvements, etc.; June to Aug. 1917 in charge of construction of water-works system at Ft. Madison, Iowa; July to Sept. 1919 collecting data for valuation of St. Joseph (Mo.) water-works system; Jan. 1920 to Oct. 1923 Draftsman, Designing Engr. and Res. Engr.-in-Chg. on construction of sewers, sewage-disposal plants, water-works pumping stations, reservoirs, distribution systems, dams, filtration plants, etc. and water-works and gas plants valuation; Oct. 1923 to Sept. 1925 Asst. Engr. in general charge of office, field and construction work, including system of intercepting mains and large monolithic concrete outfall sewer for City of Glendale, sewer system for Blythe, water-works system improvements for Needles, Cal., and valuations and preliminary studies on various other municipal improvements. TT 5.8: SP 0.7: P 5.1: RC 2.9: D 1.7.—Jan. 1927 to July 1928 Shop Engr., South San Francisco Plant, Western Pipe & Steel Co., in charge of detailing and designing boiler, steel-tank, pipe and structural-steel work. TT 1.5: P 1.5: RC 1.5: D 0.2.—July to Nov. 1928 with Thebo, Starr & Anderton, San Francisco, Cal., as Designing Engr. on water-purification works. TT 0.3: P 0.3: RC 0.1: D 0.3.—Nov. 1928 to date with Public Works Eng. Corporation, San Francisco, until June 1929 as Asst. Engr. on design of water-purification plants, etc., for California Water Service Co., and since June 1929 Project Engr. in charge of construction of Port Costa project of same company, consisting of 1 000 000 000-gal. reservoir, 5 miles of 33-in. Hume concrete pipe, 2½ miles of 36-in. gunite-coated welded steel pipe, 4 000 000-gal. filtration plant and Sacramento River pumping station (20 000 000 gal. daily). TT 1.4: P 1.4: RC 1.2: D 0.3.—TT 13: SP 0.7: P 12.3: RC 5.7: D 2.5. Refers to S. E. C. Behneman, C. G. Hyde, R. E. McDonnell, C. D. Marx, L. B. Reynolds, C. A. Smith, C. A. P. Turner, C. B. Wing.

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(1) CHRISTENSEN, AAGE BROAGER, Assoc. M., Care, Ulen & Co., 25 Philhellenes St., Athens, Greece. (Elected June 4, 1928.) (Age 39. Born Copenhagen, Denmark.) 1914 B. Sc. in C. E., Royal Pol. Coll., Copenhagen, Denmark. TT 4: P 4.—April 1914 to March 1916 and Dec. 1916 to March 1917 Recruit, Non-Commissioned Officer and (after July 1915) Second Lieut., Royal Engrs., Danish Army. TT 1.9: SP 0.3: P 1.6.—April to Dec. 1916 and March 1917 to April 1918 Civ. Engr., Nordiska Järnvägsbyggnads A/B (Northern Ry. Constr. Co.), Södertälje, Sweden, being Chf. of Party on railroad construction and Supt. on irrigation work. TT 1.9: P 1.9: RC 0.8.—May to Sept. 1918 Asst. Engr., Danske Statsbaner (Danish Govt. Rys.), being Chf. of Party on survey for double track and Designer of bridges. TT 0.4: P 0.4: D 0.1.—Oct. 1918 to Dec. 1919 Civ. Engr., N. C. Monberg (Contr. Co.), Copenhagen, being Asst. Supt. on port works, Copenhagen, and Designer of ports and hydraulic power plants, Iceland. TT 1.2: P 1.2: RC 0.2: D 0.5.—Jan. 1920 to Aug. 1921 Chf. Engr., Municipality of Reykjavik, Iceland, on construction of hydro-electric power plant. TT 1.7: R 1.7: RC 1.7: D 0.5.—May 1922 to Sept. 1925 Civ. Engr. with Christiani & Nielsen (Contr. Co.), Rio de Janeiro, Brazil, being Supt. of hydraulic works and reinforced concrete construction and Designer of reinforced concrete. TT 3.4: P 3.4: RC 2: D 1.—Nov. 1925 to date Office and Designing Engr., Ulen & Co., Athens, Greece, on designs for water supply. TT 4.4: P 4.4: RC 3.3: D 4.4.—TT 18.9: SP 0.3: P 18.6: RC 8: D 6.5. Refers to V. M. Crown, R. W. Gausmann, R. H. Keays, M. R. Keefe, R. M. Merriman, T. S. Shepperd.

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(1) COLABAWALA, JEHANGIR RUTTONJEE, Assoc. M., Sukkur (Sind), India. (Elected Aug. 28, 1922.) (Age 45. Born Bombay, India.) 1903 received certificate in Civ. Eng., Punjab Univ.—1903 to 1905 Sub-Divisional Officer, Irrigation, Gwallior, India, designed, constructed and maintained irrigation tanks and channels. TT 1: SP 1: D 1.—1905 to 1906 Officiating Div. Engr., Malwa, India, on surveys, construction and maintenance of irrigation tanks and channels. TT 1: P 1: RC 1: D 1.—1906 to 1914 Dist. Engr. and Res. Engr., Rampura Dam, Central India, on restoration of Takenpur Dam and in charge of surveys, design and construction of Rampura Composite Dam. TT 8: P 8: RC 8: D 8.—1914 to 1920 Div. Engr. in Gwallior and Executive Engr., Parbati, India, investigated, surveyed, developed and constructed several masonry and earthen dams and tanks with channels, also surveyed, designed in detail and constructed part of the Parbati Hydro-Electric Irrigation and water-works scheme, consisting of two high masonry dams, two diversion weirs and irrigation and power canals. TT 6: P 6: RC 6: D 6.—1920 to 1921 Asst. Member, Board of Revenue, Irrigation Dept., Gwallior, India, in administrative charge. TT 1: P 1: RC 1: D 1.—1921 to 1925 Executive Engr., Bombay Development, Govt. of Bombay, India, collec-

tion, manufacture and supply of building materials (about \$330 000 per month), constructed several miles of broad gauge railway sidings, roads, navigation channel, and many reinforced concrete buildings. *TT 4: P 4: RC 4: D 4.*—1925 to date Executive Engr., Rohri Canal No. 1, Div. of Lloyd Barrage and Canals Construction Scheme (designed to irrigate 5 900 000 acres) has charge of construction of head reach of Rohri Canal. *TT 4: P 4: RC 4: D 4.*—*TT 25: SP 1: P 24: RC 24: D 25.* Refers to S. K. Gurtu, C. R. Katkoria. (Applies in accordance with Sec. 1, Art. I, of the By-Laws.)

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(13) DREYER, WALTER, Assoc. M., 245 Market St., San Francisco, Cal. (Elected Aug. 28, 1922). (Age 37. Born San Francisco, Cal.) 1916 B. S., Univ. of Cal. *TT 4: P 4.*—Nov. 1910 to Aug. 1911 with Warren Bros. Co., Rodeo, Cal., clerical work and testing oil and asphalt. *TT 0.4: SP 0.4.*—June 1912 to Aug. 1913 Chainman, Levelman and Transitman, Pacific Gas & Elec. Co., Drum-Spaulding development. *TT 0.6: SP 0.6.*—June to Aug. 1914 Chainman, Northwestern Pacific R. R.—June to Aug. 1915 with H. F. Brown, Richmond, Cal., on real estate, subdivision.—May to Sept. 1918 Instructor in machine gunnery, and (after July 1918) Head of Gunnery Dept., Univ. of California (School of Military Aeronautics). *TT 0.3: P 0.3: RC 0.2.*—Sept. 1918 to Feb. 1919 1st Lieut., Air Service Aeronautics, in charge of Gunnery Dept. at School of Military Aeronautics, Berkeley, Cal. *TT 0.4: P 0.4: RC 0.4.*—May 1916 to May 1918 and Feb. 1919 to date with Pacific Gas & Elec. Co., as follows: May 1916 to May 1918 and Feb. 1919 to Nov. 1920 Office Asst., designing structures for irrigation, hydro-electric, steam electric and transmission developments, buildings, etc.; Nov. 1920 to Nov. 1929 Asst. Engr. in charge of structural and hydraulic design, Div. of Civ. Eng., Dept. of Eng.; since Nov. 1929 Asst. Chf., Div. of Civ. Eng., Dept. of Eng. *TT 13.1: P 13.1: RC 12.1: D 13.1.*—*TT 18.8: SP 1: P 17.8: RC 12.7: D 13.1.* Refers to C. Derleth, Jr., J. D. Galloway, H. B. Hammill, W. L. Huber, A. H. Markwart, O. W. Peterson, I. C. Steele.

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(14) GRAY, WILLIAM JUDSON, Assoc. M., 1103 East Elm St., Springfield, Mo. (Elected Oct. 1, 1926.) (Age 39. Born Philadelphia, Pa.) 1910 to 1912 student, Towne Scientific School, Univ. of Pennsylvania. *TT 1: P 1.*—1913 to 1923 with U. S. Engr. Office, until 1917 at Wilmington, Del., as Inspector-in-Chg. of dredging contracts (about \$500 000) and of jetty construction, involving surveys of rivers and harbors, location and specification data, etc., also Instrumentman and Draftsman; 1917 to 1919 Chf. of survey parties on examination of rivers and harbors and triangulation surveys, including establishing harbor lines for entrance of Christiana River, Del., also acted as Draftsman-Inspector on fortification work, involving design of reinforced concrete stairways, casements, plotting room, etc., locating gunsites and establishing their foundations; 1919 to 1920 Asst. Office Engr. and Acting Office Engr. on estimates, specifications, contracts, investigations, reports, drafting and designing on bulkheads, wharves, etc.; 1920 to 1923 Jun. Civ. Engr. on similar work, after 1921 devised and installed cost-accounting system for district, involving studies, installation of storehouses and investigation of costs; also special investigations and studies of hydraulic problems on Chesapeake and Delaware Canal. *TT 10.5: SP 0.2: P 10.3: RC 4.2: D 2.1.*—Nov. 1923 to date Civ. Engr. and Supt., Springfield (Mo.) City Water Co., in active charge of operation (\$915 141) and construction (\$1 483 644), including planning and installing 43 ½ miles of mains, reconstruction of filters, alterations and repairs to plant and reservoirs, revision of operation methods, reduction of pumpage and expense, investigations and studies for future water supply; 1926 to 1927 Field Engr., built foundations (13 piers) for a water tower (780 000 gal., 137 ½ ft. high), assisted in design of piers, and supervised tower construction (\$65 000); Nov. 1927 to June 1929 also acted as Engr. in charge of McDaniel Lake Dam (concrete, 1 168 ft. long, 450-ft. spillway) and highway project (\$524 512); also (with J. S. Fleming) designed and supervised construction of reinforced concrete highway bridge (400 ft. long, with approaches, \$46 000), including piers, caps, deck, etc.; as Superv. Engr. had full responsibility, including preliminary operations, inspection, testing concrete, determining and passing on bed rock suitable for dam, design and construction of reinforced concrete pump house, layout of pumps, piping, transmission mains, electric power lines, etc., and also included supervision of construction of highway bridge (built in winter months), assisting in its design; also acts as Cons. Engr. on various classes of work and projects for cities, towns, contractors, etc. *TT 6.6: P 6.6: RC 6.2: D 3.9.*—*TT 18.1: SP 0.2: P 17.9: RC 10.4: D 6.* Refers to H. C. Beckman, E. I. Brown, D. E. Gelwix, H. P. Mobberly, F. C. Warner.

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(6) HAHN, CLIFFORD AYLWARD, Assoc. M., 1216 Bellrock St., Pittsburgh, Pa. (Elected April 25, 1921.) (Age 41. Born New York City.) 1913 B. Sc. in C. E., Brown Univ.

TT 4: P 4.—May 1907 to Oct. 1909 Foreman of Constr., Croton Falls Constr. Co., Brewster, N. Y., building highways, sewers, piers and water-works, installing equipment, etc. *TT 0.3: SP 0.3.*—June to Oct. 1910 Jun. Engr. with John C. Ostrup, Cons. Engr. for Texas Oil Co., field engineering, inspecting, testing materials, estimating and laying out work for construction of oil station.—June to Oct. 1911 Draftsman, Bureau of Eng., Design and Survey, New York City, on design of concrete and steel structures, layout and selection of equipment, estimating and preparing details.—June to Sept. 1912 Designer, Commr. of Public Works, New York City, on plans, specifications and details for highways, vaults, retaining walls, etc.—June 1913 to Jan. 1918 with City of New York, until May 1915 as Draftsman with Dept. of Sewers, on plans, details, estimates and reports (4 months), with Efficiency and Budget Advisory Staff, Board of Estimate and Apportionment on maps, charts, diagrams, field inspection of highways, sewers and structures (9 months) and with Commr. of Accounts, assisting in installation of modern procedures for maintenance of sewers, highways, etc., and on special reports on technical subjects (2½ years), and after May 1915 Eng. Examiner, Bureau of Standards, Board of Estimate and Apportionment, on examinations, reports, and recommendations for expenditures, preparation of annual budget, special investigations and reports on technical matters; at various times assigned all matters of Dept. of Bridges, Docks and Ferries, Water Supply, Gas and Electricity, Plant and Structures, Armory Board and Public Service Comm. *TT 4.6: P 4.6: RC 1: D 0.3.*—Jan. 1918 to Dec. 1919 with American International Shipbuilding Corporation, Hog Island, Pa., successively as Engr., Gen. Supt. of Material Control, Asst. Mgr., Div. of Stores and Materials and Chf. Material Engr., ultimately supervised obtaining, handling, transporting, storing and accounting for materials for 180 ships under construction. *TT 1.9: P 1.9: RC 1.9.*—Dec. 1919 to Jan. 1922 Engr., Stone & Webster, Inc., Boston, Mass., in charge of field work for appraisal of public utilities including railway, traction, light and power companies (some named in application) expert testimony and special investigations; also supervised study of Massachusetts' State Government and recommendation to Legislature for reduction of expenditures. *TT 2: P 2: RC 2.*—Jan. 1922 to Jan. 1928 Gen. Factory Mgr., Heywood-Wakefield Co., Boston, Mass., being Supervisor of seven factories in United States and Canada; organized Chemical and Physical Laboratory, Depts. of Planning, Production and Time Studies. *TT 6: P 6: RC 6.*—Jan. 1928 to date with H. J. Heinz Co., Pittsburgh, Pa., until Jan. 1929 as Cons. Engr., supervised design of boiler plant (two 600-h.p. boilers, pulverized fuel) reinforced concrete warehouse and large manufacturing unit with special process equipment for Canadian plant, installation of modern can-making equipment in Pittsburgh, proposed new glass-making plant for Sharpsburg, and recommendations for lower manufacturing costs in Pittsburgh and 20 branch factories; since Jan. 1929 in charge of engineering and construction, Pittsburgh, supervising activities of Depts. of Bldg., Mech. and Efficiency Eng. and Mech. Research, installing conveyors, developing new process equipment, engineering and construction of auditorium and service building (\$1 500 000). *TT 2.2: P 2.2: RC 1.2: D 1.*—*TT 21.5: SP 0.3: P 20.7: RC 12.1: D 1.9.* Refers to W. W. Brush, J. C. Hays, J. E. Hill, J. H. Manning, A. A. Northrop.

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(10) HAYS, JAMES BUCHANAN, Assoc. M., Calderwood, Tenn. (Elected Junior, Oct. 1, 1913; Assoc. M., Nov. 25, 1919.) (Age 41. Born Boise, Idaho.) 1911 B. S. C. E., Univ. of Idaho. *TT 4: P 4.*—Aug.-Oct. 1911 in charge of construction of small water-works near Portland, Ore. *TT 0.3: P 0.3: RC 0.3.*—Nov. 1911-Feb. 1912 tracing official records. *TT 0.1: SP 0.1.*—March-April 1912 and Dec. 1912-Jan. 1913 Draftsman with Horn & Smith, Engrs., Boise, Idaho. *TT 0.2: SP 0.2.*—May-Nov. 1912 Designing Engr. and Draftsman, Smith, Kerry & Chace of Toronto, in Boise office on structures for Gun Irrigation Dist. *TT 0.6: P 0.6: RC 0.6: D 0.6.*—Feb.-Sept. 1913 Designing Engr. with F. C. Horn, Cons. Engrs., Boise, Idaho. *TT 0.5: SP 0.2: P 0.3: RC 0.3: D 0.3.*—Oct. 1913 to Feb. 1919 member of firm, Horn & Hays, Engrs., Boise, irrigation and drainage, water-works, surveys, reports, designs, construction, etc. *TT 5.3: P 5.3: RC 2.3: D 2.*—Feb.-Aug. 1919 Chf. Engr., Snake River Canal Co., building drainage system. *TT 0.6: P 0.6: RC 0.6.*—Sept. 1919-March 1923 Chf. Engr., Blaine County Drainage Dist., Idaho; Asst. to Constr. Supt., Payette County Drainage Dist.; made surveys and estimates for reservoir site in Yellowstone Park for Fremont-Madison Reservoir Association. *TT 3.5: P 3.5: RC 2.7: D 0.4.*—April-May 1923 with Idaho Power Co. on transmission line surveys. *TT 0.2: P 0.2.*—June 1923-April 1924 made reconnaissance surveys and prepared report on water supply of Boise-Mt. Home Irrigation Project (325 000 acres) for syndicate of Boston & Chicago bankers, made preliminary designs of four dams (largest 400 ft. high). *TT 0.9: P 0.9: RC 0.9: D 0.4.*—May 1925-April 1926 Designing Engr. with A. J. Wiley, Cons. Engr., Boise, on plans of Melones Dam, Cal. *TT 1: P 1: RC 1: D 1.*—May 1926 to date Res. Engr., Aluminum Co. of America, until Aug. 1928 in charge of tunnels and pipe lines (Tallasse Power Co.,

North Carolina) and since then on Calderwood Dam (Knoxville, Tenn., Power Co.), also (Jan. to Aug. 1928) had charge of final work on Santectlah Dam, grouting, etc. *TT 3: P 3: RC 3.—TT 21.2: SP 0.5: P 20.7: RC 12.7: D 4.7.* Refers to J. P. Congdon, F. W. Ely, O. A. Faris, W. H. Hill, M. R. Lewis, J. W. Rickey, A. J. Wiley.

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(1) **KENDALL, THEODORE REED**, Assoc. M., 303 South Broadway, South Nyack, N. Y. (Elected April 25, 1921.) (Age 40. Born Boston, Mass.) 1912 S. B., Harvard Coll., and 1914 M. C. E., Harvard Eng. School. *TT 4: P 4.—*Summer 1913 Office and Field Asst., hydrographic and sanitary surveys with maps and reports.—Oct. 1914 to Jan. 1916 Office and Field Asst., including work on an oyster pollution case, Narragansett Bay, R. I., and investigation of stream pollution, Blackstone River, Woonsocket to Lonsdale, R. I., for George Chandler Whipple. *TT 1.3: P 1.3: RC 1.3.—*Jan. 1916 to March 1917 Water-Works Engr. and Supt., Panama Canal, operation and rehabilitation of Agua Clara Filtration Plant, Gatun, Canal Zone. *TT 1.1: P 1.1: RC 1.1: D 1.1.—*March 1917 to Jan. 1918 Eng. Editor, *The American City*, New York. *TT 0.8: P 0.8: RC 0.8.—*Jan. to Dec. 1918 1st Lieut., San. Corps, U. S. Army, with Eng. Sec. at Washington, D. C. (3 months); in charge of operation and reconstruction, Petersburg (Va.) Water-Works (5 months), and of operation and emergency construction, Watervliet (N. Y.) Water-Works (3 months). *TT 0.9: P 0.9: RC 0.9.—*Jan. 1919 to date Eng. Editor, *The American City* and *The Municipal Index*, New York, in charge of technical editorial material and service covering water supply, sewers, sewage disposal, refuse collection and disposal, street and road construction and maintenance and street cleaning; collection, tabulation and analysis of water supply statistics covering 3 500 (1925) and 4 300 (1929) cities, also statistics on garbage collection and disposal (1926 and 1930) and on sewers and sewage disposal (1927); since May 1920 also Editor, *Contractors and Engineers Monthly*, New York, involving personal contact with construction projects and analysis of organization, methods and equipment on work in civil engineering field, including grading, highways, bridges, foundations, piers, docks, dams, water-supply and sewage-disposal plants, subways and tunnels. *TT 11.3: P 11.3: RC 11.3.—TT 19.4: P 19.4: RC 15.4: D 1.1.* Refers to E. B. Bessellievre, G. C. Bunker, H. B. Cleveland, C. Gilman, H. M. Hale, B. B. Hodgman, L. J. Johnson, G. L. Lucas, F. Mason, M. Pirnie, R. Ridgway, J. F. Sanborn, J. R. Slattery, S. F. Voorhees.

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(13) **KENNEDY, ROBERT CHARLES**, Assoc. M., 512 Sixteenth St., Oakland, Cal. (Elected Nov. 12, 1928.) (Age 32. Born Penfield, N. Y.) 1921 C. E., Cornell Univ. *TT 4: P 4.—*July 1921 to July 1923 Jun. Asst. Engr., New York State Highway Dept., acting as Instrumentman, Inspector and Engr. in charge of highway construction, drafting and checking. *TT 1.5: SP 0.5: P 1: RC 1.—*July 1923 to Nov. 1924 Surveyor and Asst. Designing Engr., St. Lawrence Valley Power Corporation, Potsdam, N. Y., until Oct. 1923 acting as Instrumentman on topographic survey for power development, then designing and drafting on Sugar Island power plant on Racket River, including dam, steel gates, penstock and power house. *TT 1.2: SP 0.2: P 1: RC 0.1: D 0.8.—*Dec. 1924 to Sept. 1925 Designing Engr., Merced (Cal.) Irrigation Dist., structural designing on steel and concrete of power house and flood gates of Exchequer Project. *TT 0.8: P 0.8: RC 0.4: D 0.8.—*Sept. 1925 to date with East Bay Municipal Utility Dist., Oakland, Cal., until April 1929 as Designing Engr., designing and checking hydraulic structures, including Pardee Arch Dam, Lafayette earth dam, Sequoia multiple arch dam, reservoir outlet works, buildings and structures for pipe lines, tunnels, reservoirs and local distributing system of Mokelumne River Project; since April 1929 Chf. Designing Engr., in charge of design of water system of nine cities and surrounding territory, including structures for storage, transmission, purification and distribution, also specifications for materials and construction, inspection of materials and surveying. *TT 4.5: P 4.5: RC 4.5: D 4.—TT 12: SP 0.7: P 11.3: RC 6: D 5.6.* Refers to E. L. Driggs, F. W. Hanna, T. L. E. Haug, J. S. Longwell, A. A. Meyer, F. T. Oakley, C. E. Pearce, A. J. Wiley.

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(15) **LINDSEY, RAY VERNETT**, Assoc. M., 1423 West Thirty-Third St., Oklahoma City, Okla. (Elected June 16, 1924.) (Age 45. Born Greenfield, Iowa.) 1909 B. S. in Civ. Eng., Okla. Agri. & Mech. Coll. *TT 4: P 4.—*June 1909 to Jan. 1910 Laborer, Blacksmith and Riveter, Missouri Valley Bridge & Iron Co.—Jan. 1910 to Jan. 1912 with Moore & McClure Eng. Co., Oklahoma City, Okla., until March 1910 as Rodman and Instrumentman, then Res. Engr., Lawton & Ft. Sill Interurban R. R., and after Dec. 1910 Instrumentman on railroad location, construction and municipal work. *TT 1.9: SP 0.1: P 1.8: RC 0.8.—*Feb. to Oct. 1912 Res. Engr., Clinton & Oklahoma Western R. R., Clinton, Okla. *TT 0.7: P 0.7: RC 0.7.—*Nov. 1912 to Sept. 1913 Instrumentman, on railroad location at Little Rock, Ark., and (after April 1913) on construction, Great Northern R. R. *TT 0.9: P 0.9.—*

Oct. 1913 to May 1918 Farmer and Stock Raiser, Kingfisher, Okla.—May 1918 to Dec. 1922 County Engr. and Surveyor, and May 1928 to July 1929 Contr. Engr. and County Engr., Kingfisher County, Okla.; first period also acted as Project Engr. (1 year) on Federal Aid Highway construction and as Contr. Engr. on municipal and drainage work. *TT 5.7: P 5.7: RC 5.7.*—Jan. 1923 to April 1928 and Aug. 1929 to date with Oklahoma Highway Comm. until April 1924 as Res. Engr., then (4 years) Div. Engr. and since Aug. 1929 Maintenance Engr. *TT 5.8: P 5.8: RC 5.8.*—*TT 19: SP 0.1: P 18.9: RC 13.* Refers to T. P. Clonts, F. Herrmann, V. V. Long, B. S. Myers, J. M. Page, D. W. Patton, E. N. Todd.

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(14) **MCCAUSTLAND, GWYNNE GRAVELLE**, Assoc. M., City Hall, Kansas City, Mo. (Elected Oct. 12, 1925.) (Age 35. Born Salem, Ore.) 1916 B. S. in Eng., and 1917 C. E., Univ. of Mo. *TT 4: P 4.*—Summer 1910 Flagman and Stakeman, Washington State Highway Dept.—Summers 1911 and 1914 Rodman successively with Stone & Webster Eng. Corporation, Derringer, Wash., and King County Highway Comm., Seattle, Wash.—Oct. 1917 to Aug. 1919 Capt. with U. S. Army, 4 months being Orientation Officer, 69th Regt., C. A. C., and 4 months Camp and Area Inspector, Camp Pontanazen, Brest, France, on inspection, construction and maintenance of tent area, construction of tennis court. *TT 0.5: P 0.5.*—June to Oct. 1917 and Sept. 1919 to Dec. 1927 with Black & Veatch, Cons. Engrs., Kansas City, Mo., first as Draftsman and Instrumentman on road location and construction, etc., at Camp Doniphan, Ft. Sill, Okla. (1917) and (after Sept. 1919) 2 years as Asst. Res. Engr. on brick, brick and asphalt, and reinforced concrete and asphalt paving in Peabody, Burlington, Newton, Goodland and Ellis, Kans., over 4 years Res. Engr. on sewers (\$35 000) and water extension (\$300 000) at Ellis, sewers and sewage disposal (\$70 000) at Tonganoxie, Kans., water-works improvements (\$175 000), Woodward, Okla., sewers and two sewage-disposal plants (\$98 000) at Cushing, Okla., and sewers, sewage disposal and water filtration and pumping stations (\$300 000) at Blackwell, Okla., 2 months Field Chemist on asphalt paving (\$130 000) at Osage City, Kans., 1½ years Inspector, Sec. B, Blue River sewer, Kansas City, and about ½ year Draftsman on paving and sewer plans, also preliminary surveys, paving, Holdrege, Nebr., and sewers, Pattonsburg, Mo., etc., and testing brick for paving, at Ft. Scott, Kans. *TT 8.3: SP 0.3: P 8: RC 5.8.*—Dec. 1927 to Jan. 1930 with City of Richmond, Ind., on design and construction of storm and sanitary sewers and construction of sewage-pumping station (\$190 000). *TT 2: P 2: RC 2: D 1.*—Jan. 1930 to date City Plan Engr., City Plan Comm., Kansas City. *TT 0.2: P 0.2: RC 0.2: D 0.2.*—*TT 15: SP 0.3: P 14.7: RC 8: D 1.2.* Refers to E. B. Black, J. F. Brown, E. H. Dunmire, A. P. Learned, E. J. McCaustland, E. M. Stayton, N. T. Veatch, Jr., R. P. Woods.

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(14) **MARKS, MORRIS FREMDER**, Assoc. M., 721 Limit Ave., University City, Mo. (Elected Nov. 9, 1920.) (Age 36. Born St. Louis, Mo.) 1914 B. S. in C. E., and 1915 C. E., Univ. of Mo. *TT 4: P 4.*—June to Sept. 1914 and June 1915 to Jan. 1916 Draftsman, Plant Maintenance Dept., American Steel Foundries, East St. Louis, Ill. *TT 0.3: SP 0.3.*—Feb. 1916 to Feb. 1918 with Widmer Eng. Co., St. Louis, Mo., as Draftsman (6 months), designing reinforced concrete buildings (6 months) and Asst. to Chf. Engr. (1 year). *TT 1.8: SP 0.3: P 1.5: D 1.*—March 1918 to Jan. 1919 with La Salle Eng. Co., Chicago, Ill., in charge of office routine in design and detailing steel ships for Emergency Fleet Corporation; Designer on reinforced concrete contracts. *TT 0.8: P 0.8: RC 0.8.*—Feb. 1919 to Dec. 1921 with Concrete Steel Fireproofing Co., St. Louis, Mo., in complete charge of reinforced concrete designing and detailing. *TT 1.8: P 1.8: RC 1.8: D 1.8.*—Jan. 1922 to date Chf. Engr., W. J. Knight & Co., St. Louis, Mo., in complete charge of all design in office, also of structural design of Telephone Bldg., Coronado Hotel, Continental Life Bldg. in St. Louis and many others. *TT 3.3: P 8.3: RC 8.3: D 8.3.*—*TT 17: SP 0.6: P 16.4: RC 9.9: D 11.1.* Refers to A. C. Everham, A. L. Hyde, W. J. Knight, R. L. Rinehart, W. F. Schulz, F. C. Woermann.

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(4) **ROSENGARTEN, WALTER EDWARD**, Assoc. M., 701 Penfield Ave., Upper Darby, Philadelphia, Pa. (Elected July 11, 1921.) (Age 40. Born Philadelphia, Pa.) 1911 B. S. in C. E., and 1919 C. E., Univ. of Pa. *TT 4: P 4.*—Summers 1907–1909 Detailer and Draftsman, Baldwin Locomotive Works, Philadelphia, Pa.—Summer 1910 Designer and Draftsman, Wharton Switch Co., Philadelphia.—Sept. 1911 to June 1912 Instructor in Civ. Eng., Univ. of Pennsylvania. *TT 0.8: P 0.8.*—June to Sept. 1911 and June 1912 to Sept. 1919 with U. S. Bureau of Public Roads, as follows: June to Sept. 1911 and June 1912 to March 1913 Engr. Asst. on road surveys, design and construction in various states, road material tests, etc.; March 1913 to March 1914 Jun. Highway Engr., being Asst. to Engr. in charge of road construction in Texas and Virginia, inspected proposed projects and advised local officials as to road improvements; March 1914 to March 1916 U. S. Highway Engr.,

being Res. Engr. in charge of construction of Federal Highway Project in Comal County, Tex. (20 miles) and Licking County, Ohio (14 miles); in charge of three field parties mapping coastal highways in Connecticut, New Jersey, Maryland and Virginia; March 1916 to March 1918 Eng. Economist, conducted traffic study of highways in St. Louis County, Mo., and economic investigation of conditions before and after construction of first 17 Federal Post Roads; March 1918 to Sept. 1919 Testing Engr., on research investigations and tests on bonding new concrete to old, bond of coated reinforcing steel in concrete, pressure of concrete against forms, effect of impact, wear, etc.; designed instrument to measure wear. *TT 7.5: P 7.5: RC 5.5: D 0.5.*—Sept. 1919 to Nov. 1929 Traffic Engr., The Asphalt Association, compiled highway mileage and asphalt production statistics, lectured at colleges and universities in eastern and southern United States; research investigations and tests on impact on paving surfaces; advised public officials and engineers on, and inspected, paving; Highway Engr. Witness before Interstate Commerce Comm. in charge of development of airport paving, advising on various projects; in direct charge of headquarters office of the Assoc.; co-operated in work of American Society of Testing Materials; prepared and reviewed material and construction specifications; investigated and reported on Low Coast Roads. *TT 10.2: P 10.2: RC 10.2: D 4.*—Nov. 1929 to date Engr., Day & Zimmermann, Inc., Philadelphia, investigation and reports on building materials, building construction and belt-line railroad facilities. *TT 0.4: P 0.4: RC 0.4.*—*TT 22.9: P 22.9: RC 16.1: D 4.5.* Refers to W. H. Barton, Jr., G. W. Craig, A. T. Goldbeck, R. H. Harrison, J. T. Voshell.

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(14) SAMUEL, THOMAS DUNCAN, Jr., Assoc. M., 442 West Sixty-Eighth St., Kansas City, Mo. (Elected March 15, 1926.) (Age 46. Born Kansas City, Mo.) Sept. 1902 to June 1906 student in Civ. Eng., Univ. of Kans. (1 year) and Univ. of Mo. (3 years). *TT 2: P 2.*—July 1906 to March 1908 Draftsman, until Jan. 1907 with Missouri & Kansas Telephone Co., then with Tuttle & Pike, Civ. Engrs., Kansas City, Mo. *TT 1.5: SP 0.3: P 1.2.*—Oct. 1908 to date with Kansas City (Mo.) Water Dept., as follows: Oct. 1908 to Sept. 1917 Draftsman and Asst. Chf. Draftsman, on plans and estimates for installation of pipe lines, header systems at pumping stations, details of reinforced concrete foundations for pumping engines, intake pier and 45 000 000-gal. reinforced concrete reservoir; Sept. 1917 to June 1919 Asst. Engr. in charge of construction at Quindaro Pumping Station, revetment work on Missouri River, construction of 2-story machine shop, store room and chemical laboratory, 36-in. and 48-in. cast-iron pipe lines and improvements to basins; June 1919 to June 1922 and May 1923 to June 1925 Chf. Draftsman in charge of plans, estimates and specifications; designed and assisted on specifications for 1 000 000-gal. reinforced concrete standpipe; specifications and in charge of design of alum manufacturing plant, 16 000 000-gal. reinforced concrete reservoir, structural steel and concrete foundations and installations of three turbo-driven centrifugal pumping units (20 000 000, 30 000 000 and 50 000 000 gal.), specifications and in charge of plans for installation of two 500-h.p. boilers; June 1922 to May 1923 and June 1925 to April 1926 First Asst. Engr., being Prin. Asst. Engr. in charge of operation of Water Dept., including maintenance, design and construction; April 1926 to date Chf. Engr. and Supt. in full charge of purification, pumping and distribution of water; construction, reconstruction, extension and repair of water-works system; placed in operation new \$8 000 000 water plant, constructed 21 000 000-gal. reinforced concrete covered reservoir, made report on water schedule and recommended new rates; completed installation of major pipe lines, etc. *TT 21.7: P 21.7: RC 12.7: D 9.*—*TT 25.2: SP 0.3: P 24.9: RC 12.7: D 9.* Refers to C. S. Foreman, B. B. Hodgman, W. Klersted, B. Lowther, R. E. McDonnell, A. L. Mullergren, N. T. Veatch, Jr.

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(11) SHULTS, CLARENCE JAMES, Assoc. M., 4343 North Griffin Ave., Los Angeles, Cal. (Elected Jan. 14, 1924.) (Age 47. Born Cleveland, Ohio.) Feb. 1902 to Aug. 1904 successively, Chairman, Rodman, Instrumentman, Chf. of Party and Draftsman, maintenance-of-way, Southern Pacific R. R. Co., Los Angeles (Cal.) Div. *TT 1.4: SP 1.1: P 0.3.*—Aug. 1904 to Jan. 1906 Asst. Engr., Gila Valley, Globe & Northern Ry., maintenance-of-way, in charge of surveying during reconstruction of line, relocated several miles, revamped grades, etc. *TT 1.3: P 1.3: RC 1.3.*—June 1906 to Feb. 1907 with Los Angeles Pacific R. R. Co., as Asst. Engr. and Chf. of Party on track survey, Los Angeles to Santa Monica and Palms to Redondo, platted track maps, and calculated 4 miles of subway location through Los Angeles. *TT 0.7: P 0.7: RC 0.7.*—March 1907 to date in City Engr.'s Office, Los Angeles, until Aug. 1922 as Asst. Engr. of Highway Design, on design of pavements, storm drains, retaining walls, etc., then Engr. of Street Design, in charge of all highway design and Cons. Engr. for Dist. Engrs. in branch offices; supervised design of pavement (over \$80 000 000). *TT 23.1:*

P 23.1: RC 23: D 23.1.—TT 26.5: SP 1.1: P 25.4: RC 25.1: D 23.1. Refers to P. H. Albright, J. E. Conzelman, S. V. Cortelyou, W. J. Fox, W. E. Jessup, W. T. Knowlton, J. O. Marsh.

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(14) SINGLETON, JACK, Assoc. M., 640 New England Bldg., Topeka, Kans. (Elected Jan. 15, 1923.) (Age 37. Born Wichita, Kans.) Feb. 1911 to Feb. 1912 Draftsman, Missouri & Kansas Tel. Co., Wichita, Kans., on building construction, maintenance work. TT 0.5: SP 0.5.—Feb. 1912 to May 1914 Deputy County Surveyor and Draftsman, Sedgwick County, Kans., on surveys, mapping, platting and acting as Chainman and Instrumentman. TT 1.1: SP 1.1: D 1.—May 1914 to Jan. 1916 Draftsman and Designer with W. W. Huff, Kansas City, Mo., designing and detailing reinforced concrete buildings, etc. TT 1.7: P 1.7: D 1.7.—Jan. 1916 to April 1917 Designer, Engr. and Contr. Engr., Oklahoma Structural Steel Co., designing and selling structural steel bridges, buildings, etc. TT 1.3: P 1.3: D 1.3.—April 1917 to July 1919 1st Lieut. and Co. Commander, Corps of Engrs., U. S. Army; recruited company of engineers, at Camp Bowie, Tex.; regiment assigned as Corps Engrs., 1st Army Corps, 111th Regt., A. E. F., service with D Co., St. Mihiel, Argonne, etc. TT 2.2: P 2.2: RC 2.2.—July 1919 to Sept. 1920 Structural Engr., detailing and designing structures, until April 1920 with Hedrick & Huff, then with J. P. Sprague Co., Kansas City, Mo. TT 1.2: P 1.2: RC 1.2.—Sept. 1920 to Sept. 1921 Dist. Engr., Corrugated Bar Co., Kansas City, designing and sales control in five states. TT 1: P 1: RC 1.—Sept. 1921 to April 1928 Chf. Engr. and Gen. Mgr., Capital Iron Works, Topeka, Kans., in executive charge of structural steel design and fabricating, sales and engineering, steel structures, buildings, bridges, etc. TT 6.6: P 6.6: RC 6.6.—April 1928 to date Engr., American Inst. of Steel Constr., New York City, in charge of district, executive work, public speaking, research, professional writing, design of higher structures, etc. TT 2.1: P 2.1: RC 2.1.—TT 17.7: SP 1.6: P 16.1: RC 13.1: D 4. Refers to R. A. Finney, H. A. Fitch, F. H. Frankland, N. W. Funk, F. N. Lewis, L. H. Miller, K. E. Vogel.

FROM THE GRADE OF JUNIOR

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(8) BULLEN, CARROLL ALLING, Jun., 111 West Washington St., Chicago, Ill. (Elected Oct. 12, 1925.) (Age 25. Born Brookings, S. Dak.) 1925 B. S. in Civ. Eng., Ore. State Coll. TT 4: P 4.—June 1925 to March 1927 Engr. in laboratory on research, Portland Cement Association, Chicago, Ill. TT 1.7: SP 0.1: P 1.6: RC 0.5.—March 1927 to date Field Engr., Lehigh Portland Cement Co., Chicago, most of time in oil fields on special work in oil well cementing operations and methods. TT 3.1: P 3.1: RC 2.—TT 3.8: SP 0.1: P 8.7: RC 2.5. Refers to D. A. Abrams, H. F. Gonnerman, M. W. Loving, J. R. Newell, F. E. Richart, S. H. Sims, S. Walker.

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(15) CHASE, ARTHUR SLOAN, Jun., 5821 Hillcrest Ave., Dallas, Tex. (Elected March 14, 1927.) (Age 30. Born Groveland, Mass.) 1924 B. S. in C. E., Univ. of N. C. TT 4: P 4.—March 1919 to Sept. 1921 with H. F. Bryant, Cons. Engr., Brookline, Mass., as Rodman, Instrumentman and Chf. of Party on surveying, and Inspector on concrete and steel building construction. TT 1.2: SP 1.2.—Summer 1922 Chf. of Party on subdivision layout with G. M. Braune and H. F. Janda, Chapel Hill, N. C.—June 1924 to Feb. 1925 Field Engr., W. C. Olsen, Inc., Raleigh, N. C., on water-works construction. TT 0.7: P 0.7.—March 1925 to April 1926 Asst. Engr., J. B. McCrary Eng. Corporation, Atlanta, Ga., on municipal improvements, including preliminary surveys, sewer, water and street construction. TT 1: P 1: RC 0.3.—April to Sept. 1926 Senior Roadway Inspector on concrete paving, North Carolina State Highway Comm. TT 0.4: P 0.4: RC 0.4.—March 1927 to Aug. 1928 with Iowa State Highway Comm., Ames, Iowa, one year as Res. Engr. on highway construction, then Chf. of Party on materials surveys, including quantity and quality surveys of proposed concreting material deposits. TT 1.4: P 1.4: RC 1.4.—March to June 1929 Senior Engr. on highway location, New Jersey State Highway Dept., Trenton, N. J. TT 0.3: P 0.3: RC 0.3.—June 1929 to date Instructor in civil engineering, Southern Methodist Univ., Dallas, Tex. TT 0.8: P 0.8.—TT 9.8: SP 1.3: P 8.5: RC 2.4. Refers to G. M. Braune, T. F. Hickerson, H. F. Janda, T. G. MacCarthy, T. Saville, F. E. Schnepfe, P. K. Schuyler.

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(5) HOYT, KENDALL KING, Jun., 1446 Belmont St. N. W., Washington, D. C. (Elected June 7, 1926.) (Age 26. Born Washington, D. C.) 1925 C. E., Cornell Univ. TT 4: P 4.—Summers 1919, 1920 and 1923 Field Asst., and summers 1921 and 1922 Rodman, U. S. Geological Survey.—Summer 1924 Laborer, Turner Constr. Co.—1925 to 1926 with Dwight

P. Robinson & Co., New York City, 3 months as Structural Tracer, 2 months job surveying and 6 months in Purchasing Dept. *TT 1: P 1.*—1926 to 1928 Jun. Engr., Water Resources Branch, U. S. Geological Survey, on stream gauging, construction of gauging works, office computations, etc., in New York, New England and Idaho Dist. *TT 2.3: P 2.3: RC 1.2.*—1928 to date (except about 4 months at Tokyo, Japan, attending World Eng. Congress and World Power Conference reporting technical features for several engineering magazines) with McGraw-Hill Publishing Co., Inc., Washington (D. C.) office, developing and writing engineering and technical news items and articles, etc. *TT 1.4: P 1.4: RC 1.4.*—*TT 8.7: P 8.7: RC 2.6.* Refers to F. A. Barnes, N. C. Grover, A. W. Harrington, I. W. McConnell, C. G. Paulsen, F. E. Schmitt.

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(1) INGHAM, WILLIAM JOSEPH BARCLAY, Jun., -109-21 One Hundred Sixty-Seventh St., Jamaica, N. Y. (Elected Oct. 21, 1924.) (Age 31. Born West Pembroke, Bermuda.) 1921 B. S. C. E., Tri State Coll.—Feb. 1922 to Dec. 1925 with Dept. of Public Works, Santo Domingo, Dominican Republic, as follows: Feb. to Aug. 1922 Instrumentman and Asst. Engr. on layout and construction of piers supporting 300-ft. reinforced concrete bridge (2 100-ft. arch spans, cantilever approaches) over Yagul River, Monte Christi; Aug. to Nov. 1922 Draftsman on surveys, topography, street work, line and grades for buildings; Nov. 1922 to Aug. 1923 Asst. Engr. on location and preliminary surveys for highway (130 km.); Aug. 1923 to Dec. 1925 Res. Engr. on construction of macadam roads (40 km.) with reinforced concrete culverts, 250 ft. of pile trestle bridges (20-ft. span) and 150 ft. of reinforced concrete bridges ("T" beam design, of 20- and 25-ft. spans). *TT 3.8: SP 0.1: P 3.7: RC 2: D 0.1.*—Feb. 1926 to date Constr. Engr. and Asst. to Supt., Kenn-Well Contr. Co., New York City, on Edison Power Station. *TT 4.2: P 4.2: RC 1.*—*TT 8: SP 0.1: P 7.9: RC 3: D 0.1.* Refers to F. N. Benedict, J. L. Bogart, J. H. Caton, 3d, L. E. Loxley, G. S. Rinehart, N. A. Swan, L. H. Walker.

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(15) KING, WILLIAM AUBREY, Jun., P. O. Box 216, Yoakum, Tex. (Elected Aug. 4, 1924.) (Age 29. Born San Antonio, Tex.) 1922 to 1923 Resident Student, and 1923 to 1926 Extension Student, Univ. of Tex. *TT 0.5: P 0.5.*—Nov. 1918 to Jan. 1921 Office Asst., Constr. Q. M., Camp Travis, Tex., construction accounts, procurement of materials, Computer and Propertyman, etc. *TT 1.1: SP 1.1.*—Jan. to May 1921 in charge of construction of \$36 000 ice and refrigeration plant, Harlingen, Tex. *TT 0.2: SP 0.2.*—May to Nov. 1921 in charge of material procurement and property; tabulation of bids and preparation of estimates, Ft. Sam Houston, Tex. *TT 0.2: SP 0.2.*—Nov. to Dec. 1921 in charge of repairs on hospital and barracks, excavations and beautification of camp at Ft. Bliss, Tex. *TT 0.1: SP 0.1.*—March 1923 to date with The Terrell Bartlett Engrs., Inc., as follows: March 1923 to March 1924 Draftsman, structural drafting, Rodman, hydrographic and topographic studies and city planning; March 1924 to July 1925 Office Asst., on bridge detailing, water-works layouts, sewage-collecting systems and disposal-plant layouts, surveys, etc.; July to Oct. 1925 Res. Engr. on city water-works (\$30 000), Dilley, Tex.; Oct. to Nov. 1925 Office Asst.; Nov. 1925 to March 1926 office and field work on dam and canal location, Frio Irrigation Project; March 1926 to March 1927 Res. Engr. on construction of International Highway Bridge, between Eagle Pass, Tex. and Piedras Negras, Coahuila, Mexico, including design of buildings (total \$260 000); March to Sept. 1927 Office Asst., on reinforced concrete and bridge design, etc.; Sept. to Dec. 1927 in office and Res. Engr. on sewage-disposal plant, San Antonio State Hospital; Dec. 1927 to Jan. 1928 Field Engr., collecting data for, and June to Sept. 1928 Res. Engr. on sewage-disposal plant and collecting system, Yoakum, Tex.; Jan. to June 1928 Asst. to Res. Engr. on state highway location and construction; Sept. to Dec. 1928 supervision of construction of water-works system at Boerne, Tex., and collecting data for sewerage system and city paving at Hallettsville, Tex.; Dec. 1928 to Feb. 1929 in office designing sewage collecting system and disposal plant for Hallettsville; since Feb. 1929 Res. Engr. on paving (\$500 000), Yoakum, and in charge of municipal improvements, Hallettsville. *TT 6.6: P 6.6: RC 4.7: D 1.*—*TT 8.7: SP 2.1: P 6.6: RC 4.4: D 1.* Refers to A. R. Alling, C. T. Bartlett, W. E. Dickerson, A. M. Erskine, J. S. Fenner, F. B. Ogle, J. W. Porter, N. A. Salgh, U. Stephens.

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(7) MCKEAN, JAMES PERCIVAL, Jun., Iowa State Coll., Ames, Iowa. (Elected Dec. 3, 1926.) (Age 27. Born in Lipscomb County, Tex.) 1924 B. S. in Civ. Eng., Rice Inst. 1929 M. Sc. in San. Eng., Iowa State Coll. *TT 4: P 4.*—June to Aug. 1922 Chairman, The Texas Co. (1 month) and Humble Oil & Refining Co.—June to Sept. 1923 Surveyman, U. S. Engr. Dept., being Instrumentman on surveys for widening, straightening and deepening Sabine-Neches Canal, part of time acting as Party Chf.—June 1924 to Sept. 1928 Asst.

City Engr., Abilene, Tex., assisting in extension of sewer system (\$100 000) and in construction of water-works extension, and earth dam (\$175 000) and in investigations for additional water supply for city, in charge of field surveys for city work and street pavement surveys and construction (\$2 000 000). *TT 4.2: P 4.2: RC 3.5.*—Sept. 1928 to June 1929 Graduate Asst., Civ. Eng. Dept., Iowa State Coll.—June to Aug. 1929 Research Asst., Iowa Experiment Station, studies on treatment of creamery wastes for creameries at Glidden and Slater, Iowa. *TT 0.2: P 0.2.*—Sept. 1929 to date Instructor, Civ. Eng., Iowa State Coll. *TT 0.6: P 0.6: RC 0.6.*—*TT 9: P 9: RC 4.1.* Refers to T. R. Agg, J. S. Dodds, A. H. Fuller, W. E. Galligan, F. Kerekes, L. B. Ryon, Jr.

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(13) NICHOLS, EARL ELMORE, Jun., Richmond, Cal. (Elected March 11, 1929.) (Age 28. Born Florence, Colo.) 1924 B. S. C. E., Univ. of Colo. *TT 4: P 4.*—Summer 1923 Chf. of Party, Colorado Power & Light Co., Denver, Colo., on survey and clearance of right-of-way for transmission line.—June to Dec. 1924 Field Engr. and Draftsman, Utah Copper Min. Co., Garfield, Utah; Transitman on dike and steam-line survey and Inspector on clubhouse construction. *TT 0.2: SP 0.2.*—Dec. 1924 to March 1925 Draftsman, Utah Power & Light Co., Salt Lake City, Utah, on concrete design, Bear River Project. *TT 0.2: SP 0.2.*—March to Sept. 1925 Designer, Chile Exploration Co., Anaconda, Mont. on general layout and design of crushing plants, conveyors, etc. *TT 0.5: P 0.5.*—Sept. 1925 to Sept. 1928 Constr. Engr., Andes Copper Min. Co., Potrerillos, Chile, on construction of ore-reduction plants; had charge of excavation, reinforced concrete and concrete testing. *TT 3: P 3: RC 3.*—Oct. 1928 to Jan. 1929 Cost Engr., Ambursen Dam Co., Tiajuana, Lower California, made cost segregation of equipment, kept unit cost on construction. *TT 0.3: P 0.3.*—Jan. to April 1929 Designer, Riverside Cement Co., Crestmore, Cal., on general layout and design of crushing and plastite plants. *TT 0.3: P 0.3: RC 0.3: D 0.3.*—May to Nov. 1929 Designer, International Smelting Co., Tooele, Utah, on layout and design of ventilating system for blast-furnace plant, checking. *TT 0.5: P 0.3: RC 0.5: D 0.5.*—Nov. 1929 to date Engr., Eng. Execution Dept., Standard Oil Co. of California, Richmond, Cal., ordering material and equipment and writing instructions for Constr. and Mech. Depts. *TT 0.4: P 0.4.*—*TT 9.4: SP 0.4: P 9: RC 3.8: D 0.8.* Refers to F. K. Ausfahl, I. C. Crawford, F. R. Dungan, J. Q. Jewett, E. B. Nelson, W. B. Saunders, E. A. Zeltfuchs.

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(3) RETZ, ROLF TORNGAARD, Jun., 101 South Cherry St., Poughkeepsie, N. Y. (Elected Oct. 1, 1926.) (Age 30. Born Levanger, Norway.) 1923 C. E., Norwegian Inst. Tech. *TT 4: P 4.*—Aug. 1923 to March 1925 Designer, Norwegian State R. Rs., Stavanger Dist., drafting, designing and estimating and acting as Rodman, Transitman and Chf. of Party on survey for new railroad project. *TT 1.2: SP 0.2: P 1.*—April to July 1925 with Alexander Potter, New York City, as Draftsman, Rodman, Transitman and Chf. of Party on sewer survey, drafting, maps and profiles. *TT 0.3: P 0.3.*—July 1925 to Feb. 1926 Draftsman, with Jos. T. Ryerson & Son, Reinforcing Dept., Jersey City, N. J., detailing, estimating and designing reinforced concrete structures. *TT 0.6: P 0.6.*—Feb. to Sept. 1926 Hydr. Designer, Elec. Bond & Share Co., New York City, on reinforced concrete structures, steam and hydro power stations, dams and spillways. *TT 0.6: P 0.6.*—Sept. 1926 to Oct. 1928 Bridge Designer, New Jersey State Highway Dept., Jersey City, on design of elevated highway, steel and reinforced concrete bridges, viaducts, culverts, piers and bridge foundations, computations and checking design and shop drawings. *TT 2.1: P 2.1: RC 1.1: D 1.1.*—Oct. 1928 to date Structural and Hydr. Designer, Central Hudson Gas & Elec. Corporation, Poughkeepsie, N. Y., on design, plans, estimates and specifications for office buildings, garages, storeroom, substations, transmission lines, gas-plant structures, maintenance and alterations of hydraulic structures, investigations, studies and reports, right-of-way searches and property investigations. *TT 1.5: P 1.5: RC 1.5: D 1.5.*—*TT 10.3: SP 0.2: P 10.1: RC 2.6: D 2.6.* Refers to S. H. Cohen, A. Knudson, H. C. Sandbeck, W. A. Schuerman, L. R. Shellenberger, F. F. Trierweller.

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(13) SIMONS, EDWARD WIDMAN, Jun., 140 Woodland Ave., San Francisco, Cal. (Elected March 11, 1929.) (Age 26. Born San Francisco, Cal.) 1925 B. S. in C. E., Univ. of Cal. *TT 4: P 4.*—May to Sept. 1925 Levelman, Dinwiddle Constr. Co., San Francisco, Cal. *TT 0.1: SP 0.1.*—Sept. to Dec. 1925 Arch. Draftsman for F. A. Gawthorne, San Francisco, Cal. *TT 0.1: SP 0.1.*—Dec. 1925 to May 1926 in private practice as Surveyor and Arch. Draftsman. *TT 0.4: P 0.4: RC 0.4: D 0.4.*—May to Nov. 1926 Engr. on design and construction for The Emporium, San Francisco. *TT 0.5: P 0.5: RC 0.5: D 0.5.*—Nov. 1926 to April 1927 with Dinwiddle Constr. Co. of San Francisco, on layout, lines, levels

and interpretation of plans for San Francisco Russ. Bldg. TT 0.4: P 0.4: RC 0.4.—April 1927 to date Engr., Redwood Mfrs. Co., San Francisco, on design and construction of wood pipe lines and tanks, cooling and tank towers. TT 3: P 3: RC 3: D 3.—TT 8.5: SP 0.2: P 8.5: RC 4.3: D 3.9. Refers to J. Cowin, C. W. Crocker, R. E. Davis, C. Derleth, Jr., A. V. Garratt, R. A. Hanson, C. G. Hyde.

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(14) UPP, PHILIP ALFRED, Jun., 3645 Blaine Ave., St. Louis, Mo. (Elected March 14, 1927.) (Age 31. Born Edgerton, Ohio.) 1923 B. S. in C. E., Case School of Applied Sci. TT 4: P 4.—June 1923 to April 1924 Jun. Engr., Illinois State Highway Dept., drafting road plans and on field inspection. TT 0.4: SP 0.4.—April 1924 to Oct. 1925 Asst., Eng. Corps, Chicago and Eastern Illinois Ry. Co., maintenance of way surveys, drafting and estimates. TT 0.8: SP 0.8.—Oct. 1925 to May 1927 Bridge Draftsman and Designer, Michigan State Highway Dept., bridge design, detailing and estimating. TT 1.1: SP 0.4: P 0.7: RC 0.7.—May 1927 to Jan. 1930 Engr., Computer and Draftsman, New York Central R. R. Co., preliminary plans and estimates for grade separation structures, bridge drafting, detailing and design. TT 2.6: P 2.6: RC 0.6: D 0.6.—Jan. 1930 to date Asst. Engr., Missouri-Kansas-Texas R. R., bridge drafting, detailing and design. TT 0.3: P 0.3: RC 0.3: D 0.3.—TT 9.2: SP 1.6: P 7.6: RC 1.6: D 0.9. Refers to W. D. Kelley, B. R. Lettler, C. A. Mellick, C. A. Miller, F. H. Neff, A. W. Wand.

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(12) WALDORF, WALLACE ASTOR, Jun., Bureau of Reclamation, Ellensburg, Wash. (Elected July 11, 1927.) (Age 31. Born Palo Alto, Cal.) 1926 B. S., Univ. of Cal. TT 4: P 4.—June 1917 to June 1919 Corporal, Field Artillery, U. S. Army. TT 0.3: SP 0.3.—Aug. 1919 to June 1920 Shipfitter and Steel Erector, Federal Shipbuilding Co. TT 0.4: SP 0.4.—Jan. 1921 to Jan. 1922 in private practice, logging and trucking, laying out and operating small plant. TT 0.5: SP 0.5.—Jan. 1922 to May 1926 Student.—July 1926 to April 1927 Chainman, Pacific Gas & Elec. Co. TT 0.4: P 0.4.—May to Aug. 1927 Draftsman and Chainman, City of Burlingame. TT 0.1: SP 0.1.—Aug. 1927 to May 1928 Jun. Engr., Bureau of Constr. & Repair, Washington, D. C., handling records of tests on materials and writing reports. TT 0.8: P 0.8.—May 1928 to date Jun. Engr., Bureau of Reclamation, Ellensburg, Wash., and Denver, Colo., until Nov. 1928 on steel diagrams and detail drawings of irrigation structures and since then on design of culverts, bridges, chutes, siphons, siphon spillways and wasteways structures, testing of siphon and detail drawings. TT 2: P 2: RC 1.5: D 1.—TT 8.5: SP 1.7: P 6.8: RC 1.5: D 1. Refers to C. Derleth, Jr., N. Enger, I. E. Houk, V. W. Russell, J. L. Savage, W. R. Young.

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(4) WHITNEY, HOWARD ERWIN, Jun., Safe Harbor, Pa. (Elected March 6, 1927.) (Age 30. Born Treadwall, N. Y.) Registered Prof. Engr., Commonwealth of Pennsylvania. 1922 C. E., Cornell Univ. TT 4: P 4.—Summer 1919 Eng. Asst. and summers 1921 and 1922 Jun. Asst. Engr., Grade 1, New York State Highway Comm., acting as Instrumentman on surveys, computing, etc. TT 0.2: SP 0.2.—Oct. 1921 to June 1922 (while student) and Oct. 1922 to Jan. 1923 Instructor in Civ. Eng., Cornell Univ. TT 0.3: P 0.3.—Jan. 1923 to April 1926 Asst. Engr., Susquehanna Power Co., Conowingo, Md., being Asst. to Constr. Engr. on proposed hydro-electric project, surveys, backwater computations and preliminary construction. TT 3.3: P 3.3.—April 1926 to Feb. 1928 with The Arundel Corporation, Conowingo, until July 1926 as Civ. Engr., acting as Res. Engr., then Res. Engr. in charge of field engineering, line and grade for plant layout and construction of Conowingo dam, design of flap gate, etc. TT 1.9: P 1.9: RC 1.6.—March 1928 to Oct. 1929 Civ. Engr., and Nov. 1929 to date Constr. Engr., Pennsylvania Water & Power Co., Holtwood, Pa., in charge of surveys and construction of Holtwood development and of surveys and core borings for preliminary work on Safe Harbor (Pa.) project; since Nov. 1929 also Constr. Engr., Safe Harbor Water Power Corporation, being Res. Representative in charge of construction of Safe Harbor hydro-electric development; duties include surveys, stream gauging, line and grade for construction, studies for plant design and layout, maps, computations, inspection, including supervision of construction testing materials, supervising concrete mixing, steel erection, riveting, etc., making reports, etc. TT 2.2: P 2.2: RC 2.2.—TT 11.9: SP 0.2: P 11.7: RC 3.8. Refers to H. F. Anthony, F. A. Barnes, L. V. Branch, B. Ehle, J. V. Hogan, J. E. Perry, P. H. Underwood, J. A. Walls.

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(1) WILLIG, WALTER LEE, Jun., 555 Westchester Ave., Port Chester, N. Y. (Elected Jan. 16, 1928.) (Age 28. Born Greenwich, Conn.) 1926 Sc. B. in C. E., and 1929 C. E., N. Y. Univ. TT 4: P 4.—July 1919 to Aug. 1923 (last year, while student) with L. C. L. Smith,

Cons. Engr., Long Island City, N. Y., as Rodman, Chainman, Transitman, Draftsman, Computer and Chf. of Party in charge of field work. *TT 1.6: SP 1.6.*—Aug. 1923 to date with Robt. E. Carlin, Civ. Engr. and City Surveyor, Long Island City, until June 1926 (while student) as Computer and Chf. of Party, and since then Asst. on superintendence of excavation, foundation and first-floor layout of apartment houses and smaller dwellings, investigating and planning jobs and in responsible charge of field work. *TT 3.8: P 3.8: RC 3.8.*—*TT 9.4: SP 1.6: P 7.8: RC 3.8.* Refers to A. H. Eccles, A. Haring, E. G. Hooper, C. T. Schwarze, L. C. L. Smith, C. H. Snow, D. S. Trowbridge.

The Board of Direction will consider the applications in this list not less than thirty days after the date of its issue.